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(Jan. 31, 1959 - Sept. 13, 1959)

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Jan. 31 - Hunting Creek -

Thousands of ducks on Potomac River at mouth of Hunting Creek. Many gulls also.

At Roaches Run many baldpate, pintail and mallard ducks.

Many ring-billed gulls, some herring gulls. A black bird with white tail and wing, a somewhat pigeon-like shape and gait, small head, pinkish red feet, flying around, lighting at edge of water - perhaps a pigeon.

Feb. 22 - north of Leesburg, on Rt. 15, road cut in conglomerate showing contact with underlying Triassic brown shale. Dips rather steeply to west.

This conglomerate or puddingstone very colorful. exposure extends along Rt. 15 from south of Leesburg for some 9 miles north. Some interesting erosion remnants.

At Point of Rocks the schist basement bends sharply up and is exposed in the Catoclin ridge. Chlorite schist?

March 8 - Melpar Laboratory,
bet. Falls Church and Fairfax.
Pure stands of *Pinus*
virginiana of two ages.

Larger stand of trees
about 25-30 m. tall, various
diameters up to 25 cm. tall
mostly between 10 and 20 cm.
1-5 m. apart, mostly bet. 2 & 4 m.
Plants seen:

- a *Pinus virginiana*
- o *Rhus toxicodendron*
- la *Smilax rotundifolia*
- la. *Lycopodium complanatum*
- a *Mitchella repens*
- la. *Vaccinium vacillans*
- ~ *Juniperus virginiana* (seedlings)
- c *Vaccinium atrococcum* (r.m.)
- e *Cornus florida*
- o *Liriodendron tulipifera*
- a *Lonicera japonica*
- o *Quercus velutina*?
- o *Nyssa sylvatica*
- o *Rubus*
- o *Rubus*
- o *Viburnum*
- ~ *Chimaphila maculata*
- o *Acer rubrum*

In places *Mitchella*
forms a mat on the ground,
in other places *Lycopodium*.
Many young *Liriodendron*, some
oak, some *Nyssa*; *Cornus*

forms a loose understory
locally.

Smaller stand of trees
10-15 m. tall, up to 15 cm. dbh.
Ground rather covered
by *Lonicera japonica*.

Some *Deschampsia* (B) on
west side, locally abundant.
Mitchella fairly common.
A few small *Juniperus*,
Acer rubrum fairly common
but all 1 m. or less tall.

Rhus copallina locally common,
not healthy.

A few *Cornus florida*, fair size.
A few seedling *Liriodendron*
and *Pinus virginiana*
a few *Vaccinium atrococcum*
but not more than 1 m. tall
One *Smilax glauca*.

Photo of pine woods.
one of deciduous woods on
other side.

Mar. 14 - Belts Woods

Eastern slopes and ridges
largely *Liriodendron*
with some oaks and a few
hickories.

- o *Obolonia virg.* (leafy shoots)
- o *Tipularia discolor* (leaf)
- o *Dioscorea quaternata* (dried)
- ~ *Arisaema atrovirens?* (dried fruit)
- lc *Lindera benzoin*
- lc *Lonicera japonica* (near edges)
- alc *Viburnum* sp.
- a *Cornus florida* (understory
to 5-7 m.)

The understory is
conspicuous. trees up to
10 cm. thick, and all sizes
down to pencil thickness.
Rather few saplings of
the large trees.

The soil is deep and
almost black, very light
and loamy. On ridges
the black layer is thinner,
at perhaps 10 cm. beginning
to get yellowish. Thick
layer of dead leaves on
ground. A few logs rotting
on ground. Several trees have
been cut rather recently.

March 29 - 1 rus. ~~east~~ ^{west} of
Johnson's Corner, east of Little
Rocky Run, about 2 mi. S of Centerville.
Lower line right of way
through deciduous forest

270'

cover of a dozen or so quail.

39310

Halis

rare, one small colony seen

11 Rosa

occasional

12 Hypericum

locally abundant

~~the~~ slender shrubs up
to 1 m. tall.
fruits bright red.

soft shrubs, up to 0.5 m. tall.

March 29 - Little Rocky Run,
just east of Johnson's Corner
about 2 mi. S of Centerville
Wooded slope, deciduous trees, on

13 Poa

common

Liasic shale

145'

small tufts and
isolated culms

Stream in broad ravine
with ~~a~~ small flood
plain, this and slopes
of ravine with deciduous
woods with little undergrowth.

On slopes Hepatica, some
Claytonia, these beginning
to flower. On the flood plain
Mertensia, in bud, sanguinaria
(in flower) ~~and~~ ~~the~~ Dentaria
laciniata in flower, ~~the~~
Anemone thalictroides
in bud, abundant
Erythronium, not yet
flowering, extending

up the slopes.
Claytonia flowering
on flats, not abundant
Flats mostly covered
by Lonicera japonica.

Patches of deciduous woods
on slope

April 5 - Fairhaven Cliffs
 Deciduous woods barely
 starting to show green.
 Undergrowth a dense
 blanket of *Lonicera japonica*
 just beginning to grow.
 Some *Lindera*, in full flower.
Smilax rotundifolia
 and *Rubus arguta* (c.f.) mixed
 in *Lonicera*. Some areas
 with little or no under-
 growth. At top of small
 beach, at mouth of
 small valley, a patch
 of *Phragmites* canes,
 completely dry, dense,
 with old inflorescences. Canes
 to 3 m. tall, 5-8 mm. thick,
 covered by sheaths only, blade
 deciduous.

No herbaceous plants seen
 flowering.

- 39814 *Phragmites communis*
 dense colony at top of beach

closely set bare canes
 3 m. tall. leaves deciduous.

April 5 - West of Fairhaven

on steep road cut in
 soft fine sandy, loamy soil

- 39815 *Viola blanda*
 small colony
 39816 *Lamium amplexicaule*
 abundant

plants depressed, spreading,
 petals white, & with black line.
 corolla magenta-crimson.
 lighter on sides of lower lip.

- April 5 - 1/2 mi. e. of Bristol
 Arise Amundson v.
 moist wooded bottom-land
 39817 ~~Bostrychia~~ Botrychium dissectum
 occasionalis f. colligatum
 18 Erythronium americanum
 very common

- April 5 - Deeply hollow
 wooded bottom-land
 4 19 Liriodendron benzoin
 common
 4 20 Liriodendron benzoin
 common

1 had red anthers 3 long, but
 of different lengths, 3 short.
 There were the only ones
 in flower, many were in bud.

long ~~bronz~~ bronz-purple
 (see below)

4 m tall
 shrub, ♀, flowers pale
 yellowish green, with
 strobiloid nectaries similar
 to those in ♂ flower.
 shrub 1 m. tall, ♂, flowers
 pale yellowish green,
 with stalked nectaries.

(39818) two leaves, these
 dark bronz spotted
 with glaucous green;
 flower cerise, tepals
 dull bronz outside, yellow
 within, no especially
 with parallel plications
 or beaks within; anthers
 varied - 19 flowers collected
 in this colony, of these:

| | | | |
|----|-------------------------------------|--|--|
| 1 | had yellow anthers, 3 long, 2 short | | |
| 10 | had red " 3 " 3 " | | |
| 1 | " " " 2 " 4 " | | |
| 4 | " " " 6 " 0 " | | |
| 2 | " " " 0 " 6 " | | |
| 1 | " " " 1 " 5 " | | |

April 7 - Annapolis

39821 *Buxus sempervirens*
cultivatedApril 16 Potomac River
just below Bubblefield Falls
Magnificent stand
of deciduous forest,
mainly *Fagus* and
Liriodendron, some *oaks*.Masses of *Erythronium*
americanum, some
E. album, *Allium* sp.,
Viola spp. ~~*nutans*~~
~~*lutea*~~, *Sedum*,
Dentaria laciniata,
D. diphylla, *Erigeron*,
Dicentra cuneolata,
Asarum canadense,
Cystopteris fragilis,
Galium aparine,
Claytonia ~~altissima~~,
Dracopis, some
Anemone, in slopes39822 *Viola striata* L.
occasional on river terrace23 *Veronica hederaefolia* L.

locally abundant on river terrace

24 *Erigeron ~~bulbosus~~* (Trin.)

locally common on lower slope

25 *Erythronium album* Nutt.
locally common on lower slopeshrub 2 m. tall, flowers
greenish, with somewhat
disagreeable fragrance, one
♀ surrounded by several ♂*Urtica*, *Geranium*,
Veronica, *Hypochaeris*, *Chenopodium*,
Linum are very abundant
on the terrace a few feet
above the river, also
Erythronium, *Claytonia*,
and *Dicentra cuneolata*.
Large colony of *Mertensia*.
Allium, considerable
Sedum.flowers cream white,
lower petals lined within -
corolla lavender,
falling very readilyleaves very glaucous, with
brown markings; perianth white, yellow
at base within, auricles none.

39826 *Dentaria diphylla* Michx.
very common on lower slopes

April 13 - Km. 27, Chyline. more
than second growth woods,
mixed but mostly
deciduous, scattered
gives *P. strobil.*, *P. nigra*,
P. virginiana, *P. pungens*.
Quercus spp. incl. *Q. ilicifolia*.
Prunus sp. *Betula lenta*
Acer rubrum, etc.

A very small stand
of *Betula papyrifera*. three
scattered trees, clumps
of young sucker sprouts,
two of them only about 5 cm.
thick, the other larger.

on a moderate east
slope, rocky, soil
thin. No really
large trees. Fine signs
but rather old.

rhizome fleshy, white,
with occasional
constrictions, flowers
white, pinkish without
lacinae in rhizome
characters to resemble
D. maxima Nutt., but
has rounded teeth on leaves.
Leaf segments too small
for either *D. diphylla* or *D. maxima*.

Apr. 14 - Big Meadows

In many areas above
the swamp level *Danthonia*
spicata seems to be the
dominant grass.

A small *Carex* is in
bloom quite abundantly.
Antennaria almost
out. *Viola* sp. in bloom
but rare. Buds swelling
on most of the shrubs.
Salix spp. in bloom.
Amelanchier arborea
also in bloom. Searched
for *Botrychium multifidum*
but found no traces,
even of dried leaves.

April 13 - ~~Shenandoah~~ ^{milepost 49}
south of ~~Shenandoah~~ ^{milepost 49}

39827 *Silene caroliniana*

steep road cut in shale

40 *Viola fragularis*

edge of woods along roadside

29 *Viola pubescens*

~~common~~ common in edge of woods

32 *Viola pumiliata*

common, roadside

April 14 - Big Meadows

edge of woods up to 1000 ft

31 *Salix*

rare

32 *Salix*

rare

33 *Salix*

occasional

34 *Salix*

occasional

35 *Salix*

occasional

April 17 - head of Jeremy's Run

Hemlock grove in canyon bottom

36 *Asarum canadense*

large colony

37 *Carex*

rare

leaves bluish-green, flowers
violet, white in center.
flowers yellow

flowers violet, white in center

1000 m

small tree 2-4 m. tall

at least 100 ft. tall

at least 100 ft. tall

at least 100 ft. tall

shrub 5 m. tall

rhizome aromatic;
flowers maroon.

Apr. 13 Hawkshell gap
Low second-growth
woods. *Betula papyrifera*
abundant, of various sizes?
G. velutina,

Sanguinaria flowering
abundantly.
A small green stem.
Crataegus common
undergrowth.

Trees up to 10 cm. diam.
many shoot clumps.
general spacing 2-4 m.
at 5-8 m.

April 14 - Elk Wallow

Second growth deciduous
woods with scattered
pines, esp. *P. strobus*.

Dentaria laciniata very
common, in flower. *Antennaria*
plantaginifolia, *Viola* sp.

Thalictrum just appearing

Apr. 19 - headwaters of Jeremy's
Run.

Second growth, deciduous
forest, a few *Pinus strobus*.
Then localized undergrowth
of *Calonia latifolia*, *Vaccinium*
bailei etc. 7 sug.
seedlings, a few older
trees. *Saxifraga*
virginica, *Dentaria*
laciniata, *Antennaria*
plantaginifolia, *Pedicularis*
canadensis.

Where trail crosses Jeremy's
Run a hemlock grove.
Maianthemum just putting
out leaves, *Laportea* also.
Isomys in flower.

J. April 19 Gorney Run overlook
Deciduous forest with
scattered pines.
The trees on lowest slopes,
probably mostly tulip,
just beginning to show
green. Tree in flat at
parking overlook may be
Maclura. Back and see
after leaves come out. Branches
green, thorny. *Freditchia* here
also.

May 2. In trip Washington
to Albany, N.Y.

Trees complete green
around Washington.

In New Jersey the trees
are not completely turned
out, but nearly.

In New England
all deciduous trees
bare. Only hales sp.
shows any sign of green.

May 2 - Hanover, N.H.

Area of deciduous
woods in outskirts
of town - on south slope
in sheltered places.

Urtica canadensis

Viola rotundifolia

Erythronium americanum

Hepatica acutiloba

Sanguinaria canadensis

Dicentra cucullaria

Hedyselin caerulea (color and
habit variable)

Equisetum hyemale
forms a large colony
and are a mat in extent
solid, crowding out the
spring flora on slopes
in deciduous woods.

Small stand of *Equisetum*
scirpoides.

May 2 Mt. Washington

Large forest of *Betula*
papyrifera and *Fagus*,
some *Pinus strobus*, locally *Pinus*
dominant. No trees
over 2 dm. diameter.

Most 10-20 m. tall
many with several
stems from base.

Large colonies of
Rhyssolobium lucidulum
some *R. complanatum*,
L. arundinaceum? *R. obscurum*.
Urtica common.
Local colonies of *Erythronium*
americanum in bud only.
Viola rotundifolia in bloom,
also *Asplenium*.

Some *Urtica nigra* var.
betula, also some
abundant higher up.
Which species is common
in some large, upright
it is quite different from
growing with the same
by common. Both are
showing.

At higher altitudes
a great few large trees,
e.g. *Pinus strobus*, *Fagus*,
up to 4 dm. dbh. in width and
in condition.

1959 New Hampshire

Pine Park

May 3 - Connecticut River
just above Hanover
Forest of low more terrace
with *Pinus strobus*
forest perhaps 35 m tall
trees up to 5 dm. dbh. from
perhaps 2 dm. spaced
3-5 m. canopy thin,
an understory up to 5-6
m. of *Tsuga*, also a lot
Tsuga seedlings and saplings
of all sizes, little or
nothing else on ground.
A layer of needles about
5-10 cm. under canopy by side
some old rotten stumps
up to 1 dm. diam. but
not many, few rotten
logs.

Some small patches of
Taxus, *Rhyodaphnum*, etc.
in thinner spots.

In places where two trees
have been blown down, one
or blow down, the by cutting
the *Tsuga* are up to 10 m. tall.
On upper terrace are a few
sugar maple saplings coming.

Robert S. Muchan says that
there has been no significant
cutting since 1900, but that
blow-downs have been
salvaged.

May 4 - Light from
Lebanon to N.Y.

The forest in these
low mountains seems
to be basically deciduous,
but with some
admixture of conifer,
in places, and with
sharply defined spots
and patches of pure
or predominantly
coniferous woods.

No apparent pattern
to the distribution of
there is a pattern.

May 1 - 1893 - Fair, flowing stream

They 1 - 1893 - Fair, flowing stream
sandy soil of 2 lanes
ridge

34314 *Hedysarum corymbosum*

locally abundant on

steep slope south of

34 *Equisetum arvense*

Very local in deciduous

wood on slope

44 *Equisetum arvense*

Loc. in edge of deciduous

woods

41 *Imyopterus*

Common in mixed woods

May 2 - 1893, Candage
abundant in the
forest

42 *Epipedium aurantiacum*

all sorts of ferns
growing from limestone
to all sorts of rocks

stream - water, & all

lands lying flat on
ground.

most of the soil is
limestone

1959 Virginia

39843

May 30 - Sleepy Hollow
(ex.) *Amphicarpa* *beata*
weed in wild garden,
pine-mor soil

May 31 - 3 miles ^{of Oakton}
along Difficult Run.
Second growth woods
of various composition
and age.

Some fairly old oak
and tulip, but rather
open in places. Locally
Lonicera japonica is very
abundant. Bottom-land
along Difficult Run
partly in mixed wood
of *Platanus*, *Quercus palustris*,
Betula nigra.

High bluffs on Difficult
Run.

Patches of scrub pine,
mostly rather open.

39844

Lonicera

planted around dwelling.

Fairfax Co.

sterile, showing first
leaves.

rounded large shrub,
thickly branched.

June 6 - Brookfield Park
Springfield

Hardwood forest in
broad shallow ravine.
A very few *Quercus virginiana*
on upper slopes.

Fagus, *Quercus alba*,
Carya sp., *Liriodendron*,
Quercus coccinea (1),
Q. falcata

up to 4 dm dbh. but mostly
1-2.5 dm. 25-30 or more m. tall.
Broken but fairly full
canopy. Trees 2-5 m apart.
Saplings closer.

Fairly noticeable second
layer 2-5 m. tall. of *Cornus*,
Acer rubrum, *Fragaria* saplings,
Kalmia latifolia, *Rubus*,
Ilex opaca (1), *Viburnum* (1).

Lower layer 2-10 dm.
of *Vaccinium vacillans*,
Viburnum acerifolium,
~~*Desmodium nudicaule*~~,
Smilax hispida, *Viburnum*
pauciflorum, *Fraxinus*,
Chimaphila, *Diervilla*

Very quadrinate
also small saplings
or seedlings of most of
the larger trees.

Very thin ground
layer of *Desmodium*
nudicaule, *Vitis* sp.,
Parthenocissus, Mitchell's
Galium crassifolium (1),
Polystichum.

Botrychium virginianum,
Carex, *Danthonia*,
Urtica perfoliata,
Smilacina, *Galium triflorum*,
Aster acuminatus (1),
Festuca rubra, *Panicum* sp.,
Hedysotis purpurea, also
seedlings of larger plants.

The ground layer is
much denser on the
west slope than on
the east.

The lower part of
this ravine has been
cleared and dammed
to make a small
pond. Weeds are very
common in the non-
flooded parts of this
clearing. Water is
very low and very
muddy. Lower banks
have no plants.

June 6 - Brookfield Park,
Springfield
in hardwood forest,
rather disturbed but
canopy complete

- 39845 *Panicum*
along trail, semi-shaded
1
2 46 *Panicum*
near trail,
1 47 *Panicum boscii*
rare near trail,
2 48 *Panicum*
common along trail, semi-shaded
1 49 *Hedyotis purpurea* v. *purpurea*
local along trail, semi-shaded
3 50 *Erigeron*
occasional
12 51 *Botrychium virginianum*
common
1 52 *Utricularia sessilis*
rare
~~53 *Danthonia*~~
1 53 *Danthonia*
rare
1 54 *Carex stellata*
rare
1 55 *Mitchella repens*
common locally
2 56 *Fagus grandifolia*
commonest tree locally
1 57 *Rhododendron atlanticum*
rare along stream

culms solitary or few,

small tufts

culms solitary, nearly erect,

small tufts, almost
erect.

tufts, flowers lavender

slender shrubs 1.5 - 2 m. tall,
flowers light ~~pink~~ yellow.
reddish yellow-green.

~~arching~~ Rhizome horizontal,
buried, white, fleshy,

stem arching, fruit immature,
small tufts

small tufts

flowers white; plant
creeping, branches ascending
leaves dull green.

tree 3 dm. thick breast high,
25 m. tall (specimen from
lowest branch) ~~reddish red~~;
small shrub; flowers
white, style purple distally, fragrant

with clear scent

June 11 - air trip from Cincinnati to Indianapolis. Country around Cincinnati of low relief but cut by a network of small dendritic drainage system. Ravines all marked by trees. Woodlots very common. Land between generally green. Trees all broadleaved.

Ponds formed by dammed up ravines and others possibly natural. very common.

Open ploughed fields toward Indianapolis become more and more marked by a dark blotchy pattern against pale gray or gray-brown sand color. In some places it seems that the black soil marks shallow ravines and depressions. In other places this is not so evident. Small streams and ravines much less numerous westward.

June 13 - trip from Bloomington to Spring Mill Park

General structure of country - a sandstone (Mississippian) cap forms a plateau that is cut away by the White River, forming the Mitchell Plain, cut into several series of Mississippian limestones, the principal one being the Salem.

June 13 Spring Mill
State Park.

Twin Caves area - said
to be virgin woods -
large hardwood - *Quercus*
nra, etc., *Liriodendron*
Acer nigrum, *Carya*,
Fraxinus, *Prunus*
americana, *Q. balata* *Juglans*
regia on higher ground.

Understory of *Corylus*,
Carpinus, small *Ulmus*
Acer nigrum, ~~the~~ *Juglans* on
higher ground.

Shrub layer, 2-3 m.,
of *Asimina*, *Ulmus*, *Lindera*,
Viburnum prunifolium, *V. acerifolium*.

Ground layer of *Viola*,
Parthenocissus, *Galium*
sp., *Erigeron*, *Peltandra*,
Urtica, *Geranium*, *Agrimonia*,
Rhus typhina, *Polypodium*,
~~Deep~~ *Thelypteris* *heavenly*.

Oaks are dominant among
large trees, tulip next, little *Carya*
oak seedlings and saplings
almost absent, *Carya*
more abundant.

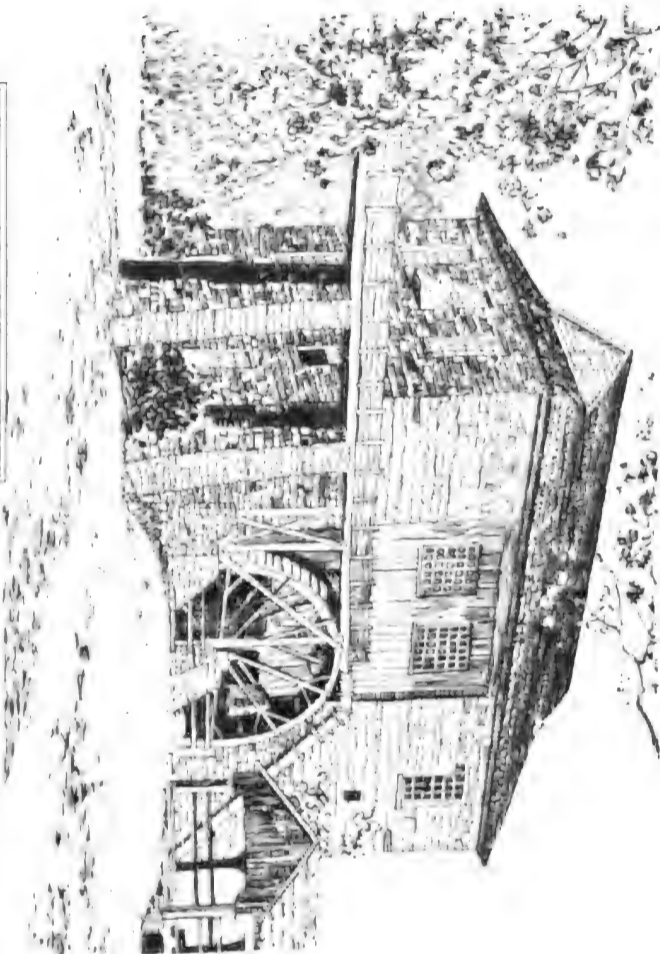
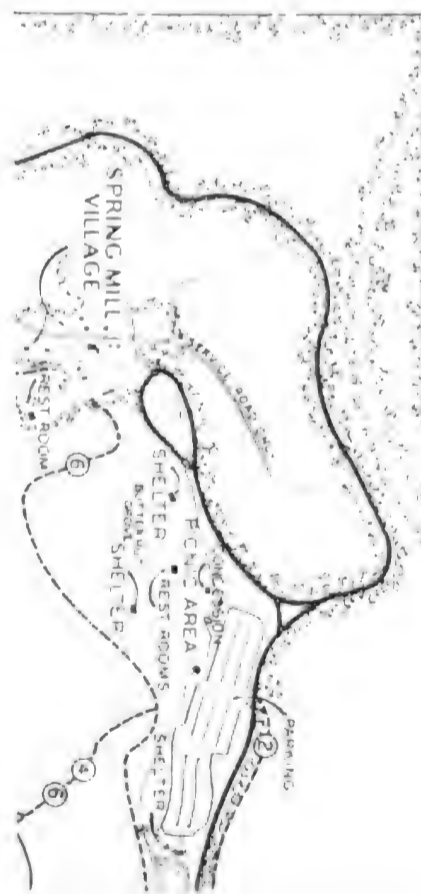
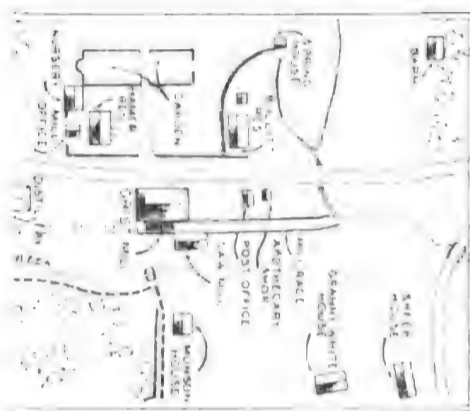
Some parts relatively
open because of blowdowns
& few basswood seedlings,
Acer rubrum,

12th.

1st
even

long

1st
in
valley.



SPRING
ESTABLISHED 1

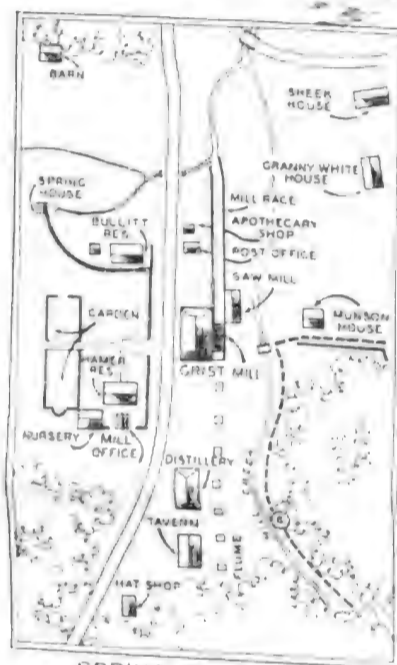
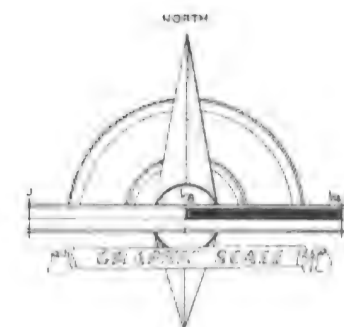


SPRING MILL STATE PARK

MITCHELL, INDIANA

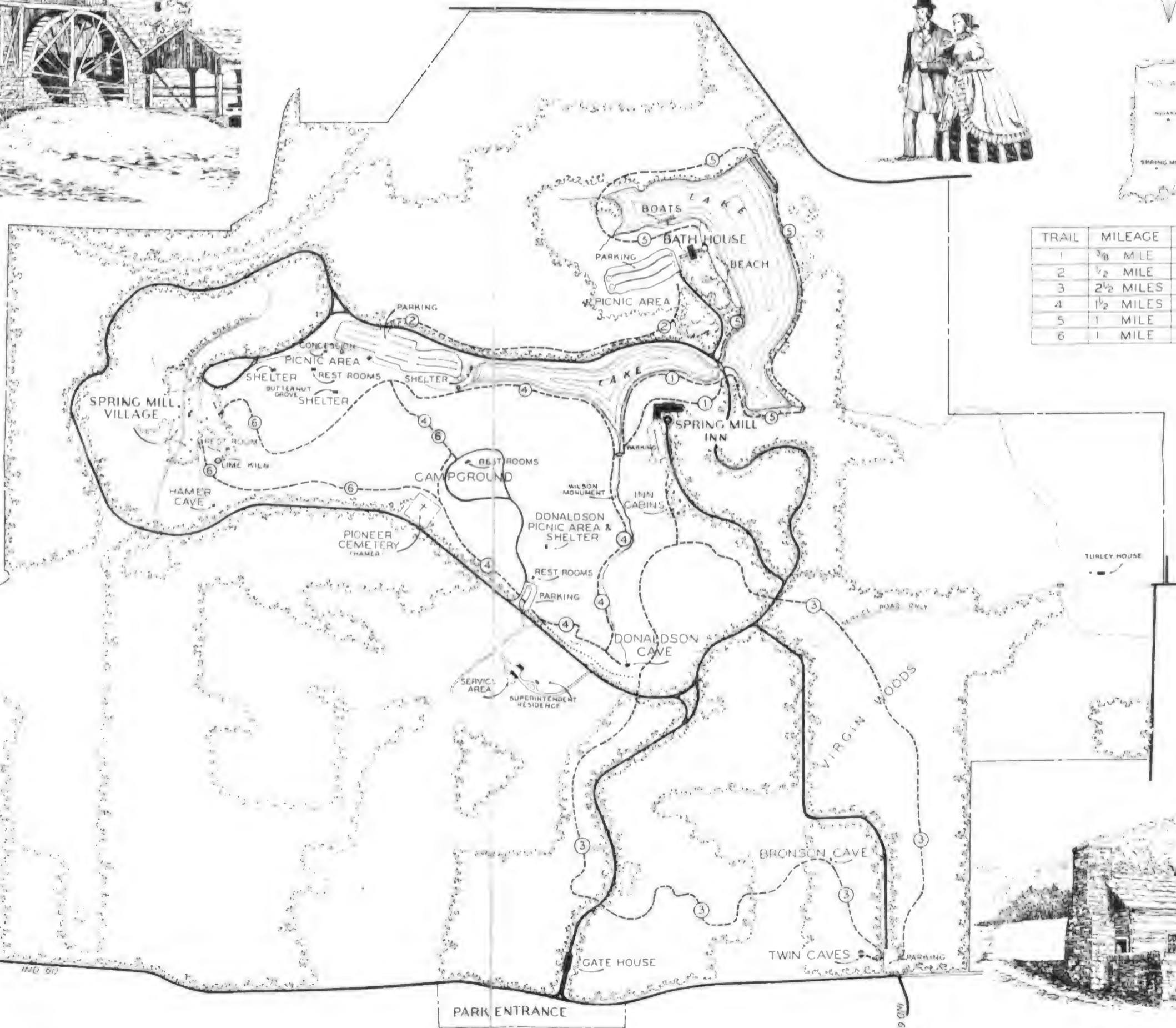
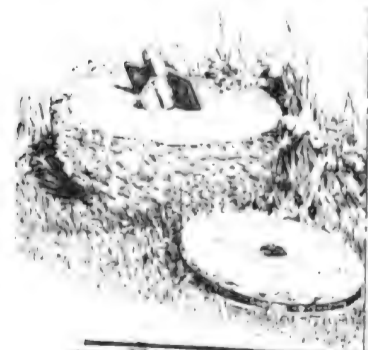
ESTABLISHED IN 1927

1210 ACRES

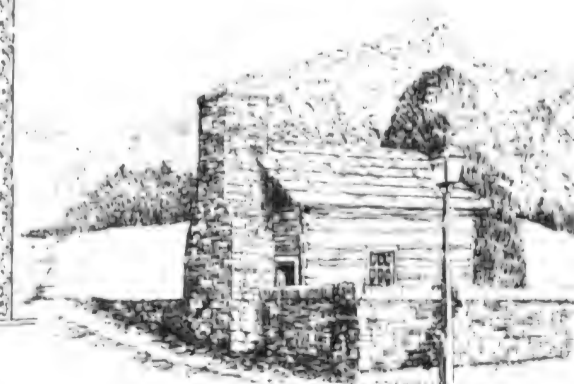


SPRING MILL VILLAGE

This is your park
to
enjoy and protect



| TRAIL | MILEAGE | TYPE OF TRAIL |
|-------|-------------|---------------|
| 1 | 3/8 MILE | MODERATE |
| 2 | 1/2 MILE | MODERATE |
| 3 | 2 1/2 MILES | RUGGED |
| 4 | 1 1/2 MILES | RUGGED |
| 5 | 1 MILE | MODERATE |
| 6 | 1 MILE | RUGGED |



THIS IS YOUR MAP OF THE TRAILS

IN SPRING MILL STATE PARK

MITCHELL, INDIANA

SPRING MILL STATE PARK

Established 1927 1,210 Acres
On Ind. 60, Near Mitchell

Among the features of the park is the restored pioneer village with the stone grist and saw mill operated by water-power, the postoffice, tavern, apothecary shop and other buildings. This is one of the best known and most popular features of the park, being re-visited several times each year by scores of visitors.

Other features are the caves, particularly Donaldson Cave and Twin Caves, which are widely known throughout the middle west. Persons are not permitted to enter the caves other than on conducted trips through Twin Caves and into Donaldson Cave. There are several other caves in the limestone formation underlying the park.

Many visitors are attracted to the park by the large tract of virgin woods, one of the few such tracts remaining in the state. Included in this tract are many fine examples of the hardwood forest trees which once covered much of Indiana.

DESCRIPTION OF TRAILS

TRAIL DESCRIPTION OF TRAILS
NOTE: Because of terrain, most trails are rugged.

- 1 Short loop from Inn to foot of hill, along Donaldson Branch and Lake, and return up the hill to the Inn.
- 2 Connects village parking area with bathhouse.
- 3 Long loop trail which one may enter near Inn cabins; pass Donaldson Cave gorge, then through dense woods past sink holes; then through Donaldson Woods past Bronson Cave and on to Twin Caves; then return to Inn or picnic area through beautiful stands of virgin woods.
- 4 Loop trail may be entered from Trail 6 at picnic area or junction of 1 and 4 near Inn; goes by Donaldson Cave, campground and Hamer Cemetery; connects with 6 to Village.
- 5 Follows lower section of Lake from bridge around to bathing beach; near 2 which leads to picnic parking area.
- 6 Connects Village with campground by way of 6 and 4, or by way of Hamer Cemetery to Donaldson Cave.

STAY ON MARKED TRAILS !

SPRING MILL INN

SPRING MILL STATE PARK

MITCHELL, INDIANA

Write to Reservation Clerk
Spring Mill Inn, Mitchell, Indiana
for Reservations and Further
Information

OPEN ALL YEAR

Rooms and Cabins Available
on the American Plan

FEES AND CHARGES AT SPRING MILL STATE PARK

1. GATE ADMISSION — 15¢ per person; free to 12th birthday. 15¢ per automobile in addition.
2. CAMPGROUND — 50¢ per camp site per day. Includes water, tables, laundry tubs and toilets. Wood furnished when available. Supervised youth groups 5¢ per person, per day.
3. TRAILERS — 50¢ per camp site per day; with electricity, 75¢.
4. SWIMMING — Beach: No charge for swimming; 25¢ for bath house privileges.
5. BOAT RENTAL — 35¢ per hour, \$2.00 per day, every day.
6. CORN MEAL — 45¢ and 55¢ per bag. Obtainable at Mill only, Spring through Fall.
7. LOOM PRODUCTS — Obtainable at Sheek House in Village, Spring through Fall.
8. CAVE TRIPS — 25¢ per person.
9. INN RATES — \$7.25 to \$7.85 per day, including meals. Single meals, Sunday dinners, banquets. Reservations made with Inn Manager.
10. FREE NATURALIST SERVICE — Inquire at Inn or Gatehouse, summer months.

Receipts from admission and service charges are used to help defray the operation and maintenance costs of the parks.

THIS IS YOUR PARK

All visitors are expected to observe the following rules which are designed to fulfill the purpose for which state parks were established, namely, to preserve a primitive landscape in its natural condition for the use and enjoyment of the people.

1. Do not injure or damage any structure, rock, tree, flower, bird, or wild animal within the park. Do **not** gather limbs, brush or trees (either live or dead) for firewood! It **must** be allowed to remain to rebuild the natural humus.
2. Firearms are prohibited at all times.
3. Dogs must be kept on leash while in the park.
4. There shall be no vending or advertising without permission of the Department.
5. Camping sites are provided at a fee of fifty cents per car or tent for each 24 hours or fraction thereof. Organized youth groups under leadership, five cents per person.
6. Fires shall be built only in places provided. Visitors must put waste in receptacles provided for that purpose.
7. Motorists will observe speed limits as posted, and park in designated areas.
8. Bathing is limited to such places and times as designated by the Department.
9. Drinking water should be taken only from pumps, hydrants or fountains provided for that purpose. This water supply is tested regularly for purity.

CONSIDER THE RESULTS
IF OTHER VISITORS
USE THE PARK AS YOU DO



HELP PREVENT FOREST FIRES

Build fires only in designated places.
Be sure that cigars or cigarettes are extinguished before they are thrown away.
Break your match before you drop it.
Report any violation of fire regulations to park officials at once.



Fire Is the Greatest Threat
to Our Parks and Forests



YOU HAVE 18
OTHER STATE PARKS
AND 14 STATE MEMORIALS —
VISIT THEM !



THE INTELLIGENT USE OF LEISURE TIME

This trail map is given to you with the compliments of the State of Indiana through its Department of Conservation in the hope that it will direct your attention to the primary purpose for which the state park system has been established.

These recreational areas are parts of "original America," preserving for posterity typical primitive landscapes of scenic grandeur and rugged beauty.

Along the quiet trails through these reservations, it is to be expected that the average citizen will find release from the tension of his overcrowded daily existence; that the contact with nature will re-focus with a clearer lens his perspective on life's values and that he may here take counsel with himself to the end that his strength and confidence are renewed.

INDIANA DEPT. OF CONSERVATION
DIVISION OF STATE PARKS
INDIANAPOLIS 9, INDIANA

Revised 2-59-50M

June 13 Spring Mill
State Park.

Twin Caves area - said
to be virgin woods -
large hardwood - *Quercus*
alba, etc., *Liriodendron*
Acer nigrum, *Carya*,
Quercus alba, *Fraxinus*
americana, *Q. balata*, *Juglans*
Fagus on higher ground.

Understory of *Cornus*,
Carpinus, small *Ulmus*
Acer nigrum, ~~the~~ *Fagus* on
higher ground.

Shrub layer, to 2-3 m.,
of *Asimina*, *Ulmus*, *Lindera*,
Viburnum prunifolium, *V. acerifolium*.

Ground layer of *Viola*,
Parthenocissus, *Galium*
sp., *Brubacna*, *Peltophorum*,
Umbellaria, *Geranium*, *Agrimonia*,
Rhus toxicodendron, *Polyptidium*,
~~Do~~ *Thelypteris hexagonoptera*.

Oaks are dominant among
large trees, tulip next, little *Carya*
oak seedlings and saplings
almost absent, *Carya*
more abundant.

Some parts relatively
open because of blowdowns
& few *Lasiacis* seedlings,
Acer rubrum.

Dominant layer 100-120' tall.
trees to 3 or even 5' dbh.
large ones widely spaced
30-50', smaller ones between.
Numerous fallen ones.
A few large dead standing
trees.

On forest surface,
numerous sink holes
broken through a thin
sandstone layer over limestone.

June 19 - Thompsons Pond
south end Longarea but a mosaic
of patches of open water
lily pads - *Thalassidroma palustris*
marsh, water lilies, marsh
invaded by red maples etc.
Tupelo marsh, etc.

Water lily seed pod, *Nymphaea*
alba and *Nymphaea adenophora*, covering
the ~~pond~~ water almost
completely in places.

Along west side is a
flat pasture about 30
ft. above lake level. On the
rather abrupt slope is a

also
P. fabryi thick growth of *Populus*
populifolia with a few
Quercus alba, *Fraxinus*
americana, *Prunus serotina*,
etc. Other parts of periphery
lined by hard wood forest
of *Acer rubrum*.

Dense *Ulmus serotina* thickets
at heads of areas embayments.
Ground cover under thickets of
Lymnocarpus, *Carex* (tussocks)
Oxycoccus, *Sagittaria* & *Utricularia*
several grasses, etc. At edge
Viburnum dentatum, *Catalpa*,
Acer rubrum, *Ulmus*.

Chipping sparrows, woodchucks,
killdeer, redwinged blackbirds,
flicker, wood ducks.

Stissing Mt.

steep slope to west,
almost a cliff. Perhaps
500', covered by thick woods,
mostly broad-leaves but
with a few conifers, mostly
Pinus strobus.

at south end is a flat
foggy meadow
bordered on one side by
pasture, but fenced,
on others by red maple
forest with tussock
undergrowth of *Carex*.
Meadow has a great
diversity of edges, grasses,
and wild flowers, etc.
Pentstemon, *Robelia spicata*,
Rudbeckia, *Ranunculus*, *Erigeron*.

Along east side of
pond is a limestone ledge
with a thick second growth
forest of sugar maples. There
are some elms and ash. Cattle
have almost completely
destroyed the undergrowth with
and native ground cover.
Stellaria media and a
few other weeds, e.g. burdock,
form a thin cover. On the
ledge and rock faces
are a few walling ferns,
Polypodium and *Dryopteris*
marginalis, but very
few.

June 21 - Backley Pond
 Norfolk, Conn. (Norfolk Co.)
 Cutover woods forest,
Acer rubrum, some *hemlock*
~~*opercula*~~ *rubra*, much
~~*rubra*~~ *rubra* on
 lower slopes, leading
 off into brushy margins
 of pond and bog.

Undergrowth of
Kalmia latifolia, *Thymus*
castaneus sprouts, some
 ferns.

Open part of bog with
Chamaedaphne, *Myrica*
gale, *Kalmia angustifolia*,
 form *laminata* -
 continuous layer. Much
Sphagnum, *Kalmia*
polifolia, *Vaccinium*
oxycocum, *Arctostaphylos*,
Lyonia, etc. ~~in~~ *Saracenia*
purpurea, etc. in ground
 layer or floating mat.
 Scattered small
Larix and *Picea mariana*
 1-2 m. and some 3-4 m.
 Some invasion by *deer*
rubrum, but controlled
 by deer. *Dracopis* - *strepens*

In open pond are some
 1292 (mud) *Nymphaea* and *Nuphar*
 but not much. *Utricularia*

[M.D. magazine for Medical
 profession, current issue,
 article on electrical field
 force around a tree and its
 oscillations.] [Edw. T. Childs
 Norfolk Conn.]

Thin muddy & slaty
 spots in bog with
 much *Dracopis*.

June 21 - Tobey's Pond
hemlock grove, tree i. ^{35"}
diam. practically no
ground cover except a
few Mitchella, hemlock
seedlings, ^{or} ferns Clintonia.
A few large white pine
ground very uneven
probably wind-thrown
as normal ~~growth~~
and in time.
Some Betula, some gl. anemone,
~~Chamaecyparis~~, Betula
saxa, Acer, Juglans,
Paeonia

An old stump of a tree
has been washed off
in the pond at the
end of the road. With it
upside, and the tree trunk is red-painted.

General note: the
forest is northern hardwood
with much hemlock. Less
of it, rather well-grown.
This has just ground
lumber and some shrubs.

June 21 - Benedict's Pond
Marblehead, Conn.

This pond is a
natural one the level
of which has been
raised about 2 m by
a dam. A swamp was
drilled out, but a
floating bog formed.
This was sunk with
stones. I looted again.
Cut up by saws, parts
drifted ashore. Then these
attempts were abandoned
and floating bog has
reestablished itself
in shallow end as an
island and around
edge. Myrica was also found
along above pond and
well wooded with
matted white pine and
hardwoods

Myrica was also found along above pond

1959 New York - Connecticut

June 20 - Thompson's Pond
Pine Plains, Dutchess Co., N.Y.
Formerly grazed land, wooded

39852

Castanopsis

2

abundant in

2 59

Sobelia spicata

common locally in

June 20 - 1 km. south of
Thompson's Pond, Pine Plains
Dutchess Co.

2

60

Fraxinus americana
common in edges
of extensive marshJune 20 - Beckley Bog,
Norfolk, ~~Schenectady~~ Dutchess Co.
Conn.

2

61

Acer rubrum var.
common invader in floating
bog

1

62

Castanea dentata
occasional ~~in~~ ~~the~~
on lower slopes above bogJune 20 - Aton Forest
Norfolk, Dutchess Co.

1

63

Carex
common in open gently
sloping meadow.crabapple group, without
- white within.
erect, flowers pale blue.small tree, 7 m. tall,
leaves somewhat
lanceous beneath.

shrub 2 m. tall, sterile.

small sprouts,
1 m. tall, sterile.small tufts, forming
patches culms
ascending panicle
drooping.

June 27 - Nicholson gorge,
near Cabin Cabin
Slope with *Pinus virginiana* forest
with some small
hardwoods.

Pines up to 15, rarely 20 cm.
dbh, generally 20 m. tall.

No shrub layer or
consequence (a few *Asarum canadense*).

This ground cover of
Parthenocissus and some
patches of *Asarum canadense*
complanatum and
Polystichum acrostichoides
are abundant. *Asarum*
is also a *Viola* - *Viola*
virginiana - *Viola*
spicata - *Viola*
young *Cassia* - *Polystichum*
purpureum - *tennifolia*, *Asarum*
large.

another moderate slope
covered by pole forest of
hardwood trees 0.3-2 m. apart,
7-10 cm. dbh, 15 m. tall.

Few shrubs

Ground layer continuous,
of *Parthenocissus*, *Impatiens*,
~~and~~ *Rhus toxicodendron*,
and many ^{other} species of herbs.

This slope in places
widely remnant by piles
of low stone walls.

In valley below cabin - *Asarum*
is common, locally forming
a cover, mixed somewhat with
Betula alleghaniensis, *Cornus*
florida, etc.

These have almost no
undergrowth and a very
sparse ground layer of
or scattered *Parthenocissus*,
Athyrium, *Asarum*, *Polystichum*
etc. and a few seedlings of trees.
Menyanthes absent.

June 27 - Lubin Cabin

Nicholson Hollow Hughes R.

3926

Betula lenta

second growth woods

- 5 65 *Osmantha cinnamomea*
common in
wooded area on bottom

- 3 66 *Pyrus*
several trees around
old home site

- 3 67 *Rosa x Barbiana* Rald.
large patch around
old home site

- 2 68 *Pyrola*
local in ~~wood~~ second growth
woods of bassapas.

- 2 69 *Hedysotis purpurea* v. *tennifolia*
common in loose pine wood

- 4 70 *Lycopodium complanatum*
var. *flabelliforme*
common in loose pine wood

- 4 71 *Panicum*
common in second growth
bassapas woods

- 4 72 *Lanicula*
common in second growth
pine and bassapas woods

- 4 73 *Erigeron annuus*
common in old clearing

tree 15 m. tall, 10 cm. diam.
several trunks bark
shiny, brown, with
wintering ice on side.

- rosette of fronds
ascending from
prostrate rhizome;
sterile

- tree 50 cm. or more d. h.
25 m. tall, sterile.

- scrambling shrub,
flowers bright pink.

leaves rather light
green, flowers white.

- loose tufts, flowers
pale lavender.

- forming large open
patches, rhizome
superficial.

- loose tufts and isolated
culms, ascending.

erect.

erect, rays purplish
lavender, disk greenish
yellow.

29874 *Hydrangea arborescens*
common in woods near stream
in rocky places

2 75 *Des*
rare in woods in bottom
of valley

2 76 *Maianthemum canadense*
very local in hemlock
woods near stream

3 77 *Thelypteris noveboracensis*
common in woods in
valley bottom

3 78 *Ethopyrum*
occasional in hemlock forest

shrub 3 m. tall flowers
white, a few marginal
streak flowers in some
inflorescence.

shrub 3 m. tall,
a few stems, stems
large patch, fruit
greenish streaked with red.

rather reddish

July 5 - South Arlington
~~wooded depression~~ 2. of Virginia Highlands
 wooded depression in old
 brick-clay pit

39877 *Quercus phellos*
 14880 common

15-81 *Celtis occidentalis*
 one tree

with 489 July 6 - Bethesda, Maryland

39886 *Hibiscus tunicatus*
 local in wooded spot in
 lawn at National Institute
 of Health.

July 25 - North Garden
 15 miles southeast of Charlottesville

83 *Hypericum*
 hilly pasture with patches
 of woods

The extensive old
 clay pits have been
 largely taken over by
 construction, including
 apartment houses, etc.
 tree is in tall (note
 concentration on under sides
 of leaves)
 tree is in tall, leaves
 rather pale green; fruit
 red long.

herb, branching from
 base, flowers cream
 color, purple in center,
 purplish on outside
 on edge of petals.
 open at least as early as
 10:30 a.m. but closed at 2 p.m.

shrub

Laurel
Lignum

July 25 -

North area, 15 mi. S.E.
of Charlottesville
Hilly pasture and
wooded land

39884

Ulmus rubra Muhl.

along ravine in pasture
85 *Liriodendron tulipifera* L.

common in erosion scars
in pasture.

{86

Acer rubrum L.

{87

isolated tree in pasture

88

Hedysolum purpureum

in thin open pasture

89

Liriodendron

abundant locally in
erosion scars in pasture

90

Quercus velutina

edge of mixed woods

91

Quercus coccinea

edge of mixed woods

92

Quercus stellata

edge of mixed woods

93

Quercus alba

edge of mixed woods

94

Quercus marilandica

edge of mixed woods

Tree 15 m. tall, 25 cm. dbh.

tree 10 m. tall, 15 cm. dbh.
specimen from lower branches
flowers pale purple.

tree 10 m. tall, 20 cm. dbh.

tree 10 m. tall, 20 cm. dbh.

tree 10 m. tall, 20 cm. dbh.

tree 10 m. tall, 20 cm. dbh.

tree 10 m. tall, branched
from base, 4 trunks 10 cm. dbh.

July 25 - Hornsbeck Mt.
Overlook, so. end. Shenandoah
National Park

Steep shale escarpment
supports a sparse
stand of brush
of *Petionia* etc. 1 m. or
so tall. Some *Asplenium*
diversicatum. A few
young pines.

Most of the cuts in
this part of the escarpment
are covered by *Petionia* etc.
similar to those.

Aug. 5 - trip by rail (B+O)
from Washington to Chicago.
west from Silver Spring
- deciduous forest
and subdivisions -
locally, some admixture
of pine. Mostly a mixture
of oaks. Pines are *P. virginiana*.
Robinia and *Ailanthus*
in disturbed spots.

Farther out are pastures
and some cornfields with
scattered patches of woods,
mostly oaks. (Fairfaxburg)
Somewhat westward
the country becomes more
hilly, mostly in pasture.
Some deciduous woods.
Some corn & orchards. Then

to Dickerson. I was in
the shale in cuts.

~~Overlook Mt. etc.~~

Point-of-Rock - crossed
a wooded ridge through
a short tunnel. Beyond
this, along Potomac, woods
on left largely *Platanus*,
on right, up slope,
very mixed, much *Robinia*.
Slopes rocky, precipitous.
Then flat country
with mixed woods
considerable *Platanus*.

Ulmus, etc.
(Princeton). Old fashioned
but rather unattractive
town. Large n.r. yards.
Ailanthus abundant.

Blue Ridge, high
rounded wooded domes
on both sides - strata
almost vertical.

Rock so blackened from
smoke that they are
not identifiable.

Spectacular gorge at
Harpers Ferry. Canal on
W. Va. side. Then a low
dam with very interesting
looking rock flats in
river - but below it.

Wide bottom-lands,
partly wooded. Then hills.

1957 West Virginia

Rolling hilly country
(single). mostly pasture,
some corn, orchards, etc.
large quarry filled with
water, on left.

Some scab-rock in position
in lines, marking very
strongly tilted strata.

Numerous very small
patches of woods. Also
scattered trees in pasture
soil a mottled ^{light} ~~dark~~
and dead brown, to black
appears to be very worn
down limestone country.

Wooded ~~hills~~ hedgerous
terrain flattens out
westward, but is still
rolling. Scab-rock
less but still evident.

Then a bit more hilly.
Crossed a black stream.
Much Crataegus, some
Juniperus in pastures
scattered. Also some
very irregular scrubby
wood. As country gets
more hilly it becomes
more generally wooded,
but woods very patchy.
(Martinsburg) Ugly town.
West - much scab-rock
rolling country.

Below Harwood the
route approaches a
mountain ridge on
the left and Potomac River
on right.

Follows river through
mountainous country
and along narrow
wooded bottom land.

Some flat intermountain
valleys. Mts. generally
wooded. Mostly hardwood.
River banks and tree water
bottoms also. Willows,
red maple, silver maple,
etc. Potomac.

Mist rising from the
river and from the bottom
lands, and the steep
wooded slopes coming
down to them, make a
very beautiful landscape.

This sort of landscape
continues for a long way
up the meandering river.
The vegetation is all
hardwood forest, no pine.

The mts. get lower, and
at Paw Paw are fairly
well away from the river.

Rapids are frequent
in the river, where
hard strata cross it.
Closer again above it, but low.

1955

Maryland

Farther on the valley becomes very broad, mostly cultivated & in pasture. A large coffee coal loading yard and plant here.

Then hilly country again, but not very rugged. Some wooded, some open rocky pasture with scattered *Quercus* and other bushes and small trees.

Then what appears to
you to be a once or twice
cut by a network of
flat-bottomed stream
valleys. Flat bottoms
barred, slopes and stream
sides wooded.

Then higher mountains
in distance on both sides.

Then wide valley
with 2 mts. on right

Gravel terraces. Large
city with extensive w. yards.
(Cumberland)

(Two sharks for gentle observation)

there is a strip of prairie
along the r.r. that is
very interesting with
quite a dense site of
flowering plants.
(Winchester)

West of Winchester the
country is a strip of
wooded land, wooded
hedges and roadsides
more or less forest - and
aspect as if of a
thin forest.

Prunus, Rhus, etc.
Yucca, Populus, etc.
Spiraea, etc. are at
least 100 ft. or more

scrubby rolling prairie
with scattered oaks,
some areas of open
oak forest, probably "oak-
openings" with little or
no shrub layer, grass
ground cover. Occasional
low spots with water,
Typha and Sagittaria. The
soil is gravelly and
pale gray or tan, very dry.

Just a few lakes. In
tamarack (Sagittaria) swamp
on left just before
Nashotah the land
attractive country.
Agriculture on more level areas

prairie (see p. 66)
There is a strip of prairie
along the r.r. that is
very interesting with
quite a dense site of
flowering plants.
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Just a few lakes. In
tamarack (Sagittaria) swamp
on left just before
Nashotah the land
attractive country.
Agriculture on more level areas

crossed in a narrow, deep
creek. The water is
clear and the banks are
high and steep. The
water is very cold and
the current is very strong.

The water is very cold and
the current is very strong.

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the current is very strong.

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the current is very strong.

Aug. 7 - train trip, via CPR
from Emerson to Winnipeg
The land is very flat,
in very large, narrow
straight, parallel to each other,
this headed out along
a few fields, at early hour.
There are patches of fields
for drainage - rather
than irrigation. The
crops are sparse spots where
the grain does not grow
where there is either vegetation
with black cracked soil.
The soil is generally
blackish, somewhat
mottled with dark
and gray. Here and
there fields of green alfalfa.
Along the railroad are
occasional strips of
what appear to be
prairie, rather a short
grass type, with a few
few flowers and broad
leaf weeds. There are
scattered patches, some
fairly large, of low
forest or tall scrub
doubtless planted
of *Populus balsamifera*,
P. tremuloides, and
few other trees, quercus.

The prairie strips
include *Helianthus*
laevis, *Galium aparine*?
Sagittaria? can be noted
on a fast moving train.
The strips occasionally
mowed.

There is a natural looking
patch of woods along
a stream, with large
trees *Populus balsamifera*,
P. tremuloides etc. rather
open and grassy.
This is fairly extensive
natural woods, mostly
Populus, either *P. tremuloides*
or *P. grandidentata*. Bark
rather smooth.

Street trees in Winnipeg
elm, oaks, ashes, box elder,
Ulmus americana (A.)

Kildonan Park, Winnipeg
Part of this park is
landscaped and normal,
but a fair area is a
natural forest of trees
about 15 m. tall, canopy
rather complete, perhaps
75-80% somewhat irregular,
trees 2-3 m apart, 10-25 (or 30) cm.
dbh. *Ulmus americana*,
Fraxinus sp.; *Acer negundo*,

Quercus macrocarpa (0),
Populus spp. (0), *Tilia americana*

A rather open and
 irregular shrub layer
 (1) 2-5 m. tall, of *Prunus*
virginiana (0), *Corylus*
americana, *Viburnum* sp. (2),
 young *Fraxinus*, young
Populus tremuloides, *Ulmus* etc.

A dense herb layer of
~~about~~ about 1 m. high or
 less, of *Asperula canadensis*,
Osmorhiza longistylis,
Elymus sp., with some
Rhus toxicodendron, *Staphylea*,
Smilax herbacea, *Thalictrum*,
Thalictrum, *Asarum*,
 etc.

Rail trip north from
 Winnipeg -
 across the flat black
 silt of glacial lake
 Agassiz, through the
 Aspen Parkland - a
 mosaic of prairie now
 mostly changed to grain
 fields etc and patches
 of low forest, mostly
 almost pure stands of
Populus tremuloides,
 these very ~~succulent~~
 defined. Some *S. helix*,
 not far from Winnipeg

have considerable
 been regarded. When
 burned then, aspen
 stands send up a
 thick coppice of such
 low to roots. A few
 burned stands seem
 to be replaced by *Aspen*
 stands. Northward
 the proportion of forest
 generally increases.
 The stability of these
 forest patches is probably
 greatly enhanced by the
 sprouting ability of the
 roots.

Toward Winnipeg we
 see occasional small
 marginal patches with
Aspens + *Betulas*. Also
~~later~~ the proportion
 of prairie, mostly pasture,
 to what becomes greater
 and taller, compact
 shrubs to 2 m. tall, usually
 1 m. becomes an important
 component of the vegetation.
 Much of the prairie now
 is an open stand or
 scrub savanna.

To the west is the lower
 end of the Riding Mt.

- 29 *Vaccinium*
 common
 3991 *Vaccinium myrtilloides* Michx.
 common
 11 *Vaccinium*
 common
 12 *Rhamnus alnifolia*
 on edge of
 4 13 *Potentilla fruticosa*
 common on edge of
 3 14 *Ledum groenlandicum*
 very common
 1 15 *Picea glauca*
 abundant, dominant
 1 16 *Physostegia*
 in ditch, growing in water
 in cleared land: along
 river
 17 *Salix interior*
 common
 18 *Crataegus*
 possibly planted
 19 *Cornus*
 probably planted
 20 *Cornus*
 probably planted

Photos

end of roll: 1 K giant s. flos
 boreal forest

1-15 on 2 K near Cormorant Lake

1-19 on 2

mostly boreal forest & larch swamp
 several of lakes and submerged
 meadow veg.

fruit orange red

low shrub, fruit blue

fruit to ascending.

fruit immature
 low shrub, 0.5 m tall.

fruit black
 shrubs up to 0.5 m tall.

flowers yellow
 low shrub

slender tree 5 m tall,

glaucous
 flowers ~~are~~ rose-pink.

shrub 3-4 m tall,

slender.

shrub 2 m. tall.

fruit immature.

shrub 2 m. tall,

fruit red, juicy.

shrub 2 m. tall

fruit orange juicy

Aug. 9 - Between Hudson Bay Pt. and The Pas - continuous boreal forest, a mosaic of stands of spruce and aspen with *Larix* dominant locally probably in swamps. This is on moraine deposits. The stands are of different sizes. The aspen stands apparently follow fire. Several large areas of dead trees, trunks without branches, some showing charred surfaces, show that fires are not unusual. The trees mostly do not exceed 20 or at most 12 m. in ht.

In a small area of spruce forest at The Pas the trees were small, rather openly spaced. On the ground was a thick moss layer with *Equisetum*, *Geocaulon*, *Vaccinium*, *Campanula*, *Parnassia*, etc.

North of The Pas about 40 miles, at and near Cormorant Lake bedrock comes to the surface in substantial areas. It is a flat-lying bedded rock, probably marble. When it has been scraped clean of soil by the glacier the vegetation is mostly confined to the joint cracks, making a geometrical pattern. When the surface is with *Pinus banksiana* forms stands, either pure or mixed with spruce. Interspersed are patches of moraine with spruce, and part with *Larix*.

In this area *Petrela glandulosa* (a var. *glandulifera*) forms a shrub layer 0.5-1 m. high in open parts.

Some areas have forest replaced by a dense *Larix* scrub 2-5 m. tall or lower. Clearings support meadow vegetation either of sedges or broad-leaved.

Some *Cladonia* in drier areas and especially on rock under pine mats of *Quercus laevis* are common.

Along the railroad is a cleared road with a rich herbaceous vegetation.

The jack pine stands are very open, some are almost savanna-like. The ground layer, here, is sparse.

In a rather dense stand of jack pine just north of Weaucha Pile saplings were coming up abundantly as an understory.

North of the Indian town road, a patch of granite or gneiss lies above the surface in places forming rounded knolls, between which are deep fields and marshy.

On the knolls the trees are generally large and rather widely spaced. The ground is covered by *Cladonia*, moss and *Cornus canadensis*, in places forming a mat up to 6-8 cm. thick. with *Sphagnum cuspidatum* in places, usually in depressions.

Aug. 3 - Wabowden

edge of dense spruce thicket

39921 *Habenaria hyperborea*

faintly common in moss

1 22 *Polygonum*

rare

1 23 *Polygonum*

rare

1 24 *Equisetum*

very common

2 25 *Carex aurea*

occasional

26 *Alnus rugosa*

common

1 27 *Cornus canadensis*

occasional

3 28 *Carex*

common, deeply rooted

1 29 *Rubus arcticus*

common

1 30 *Spiranthes romanoffiana*

same - side of railroad

2 31 *Polygonum*1 32 *Lepilobium*

1959

flowers pale green

leaves reddish

perigynia orange-yellow

shrub 2-3 m. tall

fruit red, pleasantly
acid-sweet

vine, flowers whitish

Aug. 3 - Lippewick, 700 mi
n.e. The Pas

in open forest, largely Picea
on rather high, dry ground

39933

Stellaria

occasional

4 34

Populus balsamifera
common

4 35

Calla palustris

in wet sphagnum at edge of bog

1 36

Caltha palustris

in wet sphagnum at edge of bog

2 37

Lycopodium annotinum

very local

2 38

Betula

common

1 39

Rubus acetos.

common in sphagnum - rare

1 40

Galium

very rare in sphagnum - rare

2 41

Ribes

rare

1 42

Actaea rubra

rare

2 43

Salix

common

2 44

Alnus

common

45

same - railroad embankment

45

Rubus

13/1/11

490

slender tree 5 m. tall
(others much taller)
spathe whitish,
fruit immature.

erect

tree 15 m. tall, 15 cm. d.b.h.
bark white (leaves on
upper stems branches
larger).

fruit immature

erect

low shrub, fruit turning
black.
fruit immature

shrub

shrub 3 m. tall; leaves
paler, slightly glaucous beneath

canes erect; fruit red, sweet.

same - ^{grassy} cleared strip along
railroad,

39946

~~torreyana~~ ^{occasional}

1

47

Vaccinium -
occasional

1

48

Erigeron
occasional

2

49

Botrychium
common in deep grass

2

50

Pyrola ~~maritima~~
common on sphagnum
in open and in open woods

1

51

Geranium pauciflorum
rare in open and in open woods

2

52

Gentianella prorepens
common

1

53

Ribes
occasional

2

54

Linum
occasional in open and in open woods

39947a *Loligo multicaulis*

same - marsh

2

55

Achillea millefolium
common

1

56

Aster nemoralis
occasional

2

57

Geranium
rare

1

58

Aster praealtus
occasional

4

59

Salix
occasional at edge of

dwarf shrub; fruit blue.
erect, flowers pinkish white.

flowers yellow.

leaves dull lavender.

low shrub, fruit red.

flowers white

rays white

3 rays purplish

shrubs 3 m. tall.

79960

Agropyron

2

occasional on gravel bank
at edge of

3

61

Carex

common in

2

62

dominant in

67

Potentilla palustris

rare in edge of water in

same on gravel

3

64

Spergularia

Common in 2-5 m. d.
water, leaf & submerged.

1

65

Hippuris vulgaris

submerged

1

66

Calla palustris

Common in 2-5 m. d.

3

67

Fragaria

common

same + gravel bank

stem for below

stem

fruit red, rather poor
flavor, tart leaves
glaucous beneath.

Aug. 9 - along railroad
south of Churchill, from
Hilcox to Churchill.

Varies from an open
evergreen scrub with
dwarf scrub or dwarf
heath ground over to open
dwarf scrub or dwarf
heath ~~with~~ with scattered
evergreen shrub.
much of the ground
rough and disturbed
by frost action. The
shrubs are tiny slender
sparelike dwarfed spruces.
Occasional closed scrub
of such spruces. Occasional
folds, occasional grasses
filled in folds or along
top, occasional patches
of *Larix* scrub.

Large areas have scattered
bare slender twigs.
Through they had been
swept by fire.

Chusonia generally abundant
esp. most of these types.

In places the spruces are
mostly or entirely replaced by
leaves.

inophorum rather abundant
here
(? trapped gail)

20-30 mi. S of Churchill
are large areas of
treeless dwarf heath,
very hummocky.

Then sparse scrub
and heath.

Areas a few mi. S of
Churchill with dense
dark and white spruce-
young alluvial land ~~of~~
near rivers. As peat
develops black spruce
succeeds.

Heath, influenced
by fire. Low stature
due somewhat to this,
though growth is very
close low very small
trees 20 years old.

Much *Larix* scrub
either dense and 1-2 m. tall
or open, clumpy, 1 m. or less tall.
General aspect gray green.
General color of peat
hummocks brownish green,
dark, except where *Cladonia*
or *Sphagnum* gives a pale
color - odd hummocks
show orange-brown peat,
which is *Sphagnum* peat
acc. to *itchie*.

Paraspartium either is in
peaty areas, because of insulation
10-20 m. down in drained alluvium.

Aug. 9 - Churchill,

soggy dwarf shrubby area,

39768 Eleagnus

common

2 69 Salix

occasional

4 70 Betula glandulosa

occasional

3 71 Salix

occasional

2 72 Arctostaphylos rubra

common

4 73 Senecio pauperculus + flavovirens

common

3 74 Parnassia palustris

common

1 75 Pinguicula vulgaris

occasional

1 76 Topfieldia pusilla

common

5 77 Salix reticulata

common

1 78 Salix reticulata

common

1 79 ~~Geum~~ Primula equalisensis

rare

W. Mack.

1 80 Pyrola

rare

2 81 Vaccinium uliginosum

common

2 82 Polygonum viviparum

common

1 83 Castilleja nana

common

Aug. 9

aspect

semi-prostrate shrub,
- berries scarlet, juicy
~~low shrub~~

shrubs 0.7 m. tall

low shrub

prostrate, fruit red,
- almost ripe.
flowers yellowpetals white with
- pellucid veins.
leaves pale green, flowers
- deep purple.
only pistillate plants seen.prostrate, spikes erect,
- reddish.
prostrate

pale green

flowers white

prostrate, fruits blue.

flowers white, bubbles
- reddish to blackish
collar bright purple, bracts
and calyxes dull purple.

79784 *Trigonon*
res

Aug. 9 - Fort Churchill, 12 mi. S.

2.5 mi. S. of Churchill

~~85~~ *Pyrola* in ^{moor} peaty deposits
on low quartzite ridges,
among scattered ~~small~~
small spruce trees.

85 *Pyrola*

occasional

86 *Pyrola* (monocot) ~~uniflora~~
common

87 *Habenaria obtusata*
common

88 *Habenaria hyperborea*
rare

89 *Astragalus*
common

90 ~~*Pedicularis*~~ *Pertusa alpina*
occasional

91 (grass)
occasional

92 *Laxifraga tricuspidata*
common on rocks

93 *Astragalus*
occasional

94 *Rumex arcticus*
rare, in shallow pools

95 *Astragalus*
occasional

96 *Orchis rotundifolia*
very local

rays white, calyx
maroon purple.

flowers white.

flowers white, nodding,
fruits becoming erect.

flowers pale yellow

flowers pale yellow.

flowers white

branched from base

caespitose

dense branched clumps.

erect, roots thick, spongy.

flowers deep maroon purple.

upper segments purple, lateral
whitish, lip white with
purple spots.

79997 *Achillea millefolium* ?
occasional on rocks

2 98 (grass)
common

2 99 ~~*Polygonum*~~ *decumbens* ^{andromeda} ~~foliolosa~~
common in rock crevices

40000 *Lolidaia multiradiata*
common

3 01 (grass)

common in rock crevices

3 02 *Dryas integrifolia*
abundant

3 03 *Carex scirpoides*
locally abundant

1 04 *Carex scirpoides*
locally abundant

2 05 *Pyrola grandiflora*
locally common

3 06 *Hedysarum mackenzii*
local

1 07 *Oxytropis campestris* var.
local

1 08 *Astragalus*
common

1 09 *Cypripedium passerinum*
rare

1 10 *Draba*
rare, ~~in~~ in rock crevices

1 11 *Hebeia ~~huffii~~ palustris*
growing in shallow pool

~~*Lesquerella*~~

heads white.

leaves somewhat glaucous,
— heads dry.
inflorescence reddish.

heads yellow.

acropetal

flowers white, mostly
past anthesis, styles
twisted together in fruit.
badly attached by smut.

fruiting racemes rose-col.

flowers bright crimson. maroon

various flowers white.

flowers dull pale purplish.

rays yellow.

- same loc. - in lower dunes
between ridge and beach
- 40012 *Lesquerella arctica*
rare
- 13 *Castilleja caespit*
common
- 14 *Gentiana ~~sp.~~ ^{maculosa (Michx.)}*
occasional
- 15 *Arnica alpina* var. *atherodes*
common
- 16 *Anemone multifida*
common
- 17 *Potentilla nivea*!
common
- 18 *Taraxacum*
common
- 19 ~~*Stachys*~~ *Pradys arenicola*
var. *pubescens*
rare
- 20 *Epilobium angustifolium* L.
very common
- 21 *Geranium pfeifferi* ?
occasional
- 22 *Stellaria media* L. ?
common
- 23 *Salix repens* var. *multiradiata*
common
- 24 *Androsace septentrionalis* L.
rare
- 25 *Salix*
rare
- 26 *Lychnis aeneus*
abundant, binding dunes along beach

ht + 1-3 pm

fruit globose.

bracts and calyxes
dull rose-purple. corolla
purple with green upper lip.
flowers pale dull purple.involucres narrow,
rays bright yellow.

flowers yellow

flowers white

petals rose purple

very prostrate

slightly stiff, glaucous,
petals white, bifid,
anthers orange-red.
heads yellow.

plant reddish

low shrub

- 3740027 ~~Ledum~~ *Ledum palustre* *polifolia*
occasional in crevices
- 1 28 *Ledum*
common in peaty spots
- 2 29 *Luzula*
rare on peaty ledges
- 1 30 *Sterilaria*
~~occasional~~ on rocks and ledges
- 2 31 *Potentilla*
common on ledges and in crevices
- 2 32 *Melandrium*
rare on peaty ledges
- 3 33 *Gea*
occasional
- 2 34 *Empetrum nigrum*
abundant
- 4 35 *Carex*
locally abundant, in peat
and in water.
- 2 36 *Carex*
in pools of water
- 4 37 *Ranunculus*
in deep pools of water
- 4 38 *Chrysanthemum arcticum* L.
in rock crevices and in
pools of water
- 2 39 *Oxys integrifolia*
abundant
- 1 40 *Salix*
common
- 2 41 *Equisetum variegatum*
local
- 2 42 *Salix*
local

leaves glaucous white beneath

petals white bifid

leaves white beneath;
— petals yellow.
petals white

prostrate, forming a mat;
berries black, inedible

deep rooted

stems very weak and
fistulose, inflorescences
erect, petals yellow.
leaves fleshy, rays white,
— disk greenish yellow
forming mats, mostly
— in fruit, petals cream color.
low shrub.

low shrub, leaves glaucous
beneath.

40043 *Rhododendron laffronicum*

2 occasional

3 44 *Lolix*

occasional

1 45 (grass) *Poa glauca*1 46 *Lolix*

wet peaty depression

2 47 *Triglochin maritimum*
common in standing water2 48 *Potentilla anserina*? *egadi*
local in edge of water2 49 *Plantago maritima*
local in rock crevices near sea2 50 (grass) *P.*
local in wet places2 51 *Saxifraga tinnifolia*
very common1 52 *Cerastium*

rare in crevices

2 53 *Ribes*
same, on gravel flats back of field

common

7 54 *Arenaria peploides*
commonAug. 12 - Churchill town site
moist weedy place2 55 *Rhinanthus*
abundant1 56 *Euphrasia arctica*
abundant

depressed shrub

dwarf shrub

leaves channelled on
ventral side.leaves fleshy, somewhat
channelled on ventral side.
depressed, forming a mat.flowers white plant
caespitose, mostly ~~at~~ past
flowering.prostrate, fruit not
quite mature.
forming large dense
round mats. petals
white. fruit green.

flowers yellow.

flowers white

40057

(grass)

locally abundant.

Aug. 10 Twin Lakes Hill
in open spruce - birch
forest with deep lichen-moss
carpet.

- 1 58 *Vaccinium uliginosum*
abundant
- 1 59 *Pedicularis*
rare
- 1 60 *Salix reticulata* *vestita*
rare
- 1 61 *Vaccinium vitis-idaea*
common
- 3 62 *Salix*
occasional
- 3 63 *Fedum goenlandicum*
abundant, dominant in shrub layer
- 2 64 *Salix laurina*
common, subdominant shrub
- 2 65 *Salix*
occasional
- 3 66 *Salix*
occasional
- 4 67 *Betula glandulosa* or *glandulifera*
common locally
- same - open hummocky
bog with deep lichen layer
- 7 68 (grass)
common
- 3 69 *Rubus chamaemorus*
very common

dec. shrub, leaves
gray-green.

stems ascending.

depressed almost sterile.

shrub leaves glaucous
beneath.

shrub 0.5-0.8 m. tall.

petals white.
shrub 5 m. tall.

shrub, leaves green on both
sides.

tal. shrub, leaves somewhat
glaucous, revulso beneath.
shrub 1.9 m. tall

erect

fruit orange, not quite ripe.

40070

Ledum greenlandicum

3

most abundant shrub

2

71

Ledum

rare

same

in very disturbed burned
clearing

2

72

Equisetum semipodice

abundant

4

73

Chenopodium (L.) capitatum

common

1

74

Poa glauca

occasional

7

75

Composita

common

(Ctd. from p. 112)

Twin Lakes till - a gravel
esker with a clearing on
top. Mostly open forest
of white spruce, some
larch, about 5-6 m. tall,
with a deep loose mat
of *Cladonia*, mosses,
other lichens, etc. perhaps
2-4 dm. deep, on ~~top~~ shrub
layer of *Ledum greenlandicum*
0.5-0.8 m. tall, *Vaccinium*
uliginosum abundant in
lichen layer. This has got
very hummocky

shrub 2-3 dm. tall.

depressed.

fruiting heads red,
~~are~~ fleshy, insidiously
sweetish.

very erect, glaucous

stems ~~are~~ fleshy,
half branched from base,
flowers coral, tipped with
yellow.

Small areas are more
dense and have a greater
proportion of larch,
here a shrub.

Other areas, each
large trees all together,
are open heath with
shrubs very sparse,
mostly *Ledum* ~~after~~
greenlandicum, but this
of lower stature than
in woods. Some *L. procurum*
here also. The ground
layer is a hummocky

Herbarium of *Adonia*
and some *Phlox*
seeds in this case
etc.

(C² from 110)

- 4/0076 *Androsace septentrionalis*
open burned ground
1 77 *Anemone multifida*
open burned ground. rare
1 78 *Epilobium daboecium*
open ground

flowers white.

July 10 -

A black spruce muskeg
open to sparse black
spruce 2-3 m. tall.
in very hummocky
bog of sphagnum
some Cladonia, much
Rubus chamaemorus
Vaccinium and grasses
Ledum greenlandicum
Empetrum and some
some Lycopodium
anostegium in bogs
Peltandra,
viticoides.

Patches of water with
caves in sphagnum
Mnium sp. in water

around them, mostly wet
areas of sphagnum
open to black spruce
Ledum sp.
Equisetum arvense

some open areas of dwarf
heathy sphagnum
Ledum spp. Salix, Vaccinium
nigrum, T. caerulea
Cladonia, Rubus
a landlocked var. glaucolutes

Patches of open spruce
with very hummocky
bog between, about
half or more sphagnum
Cladonia between, Rubus
chamaemorus, Pedicularis
etc. in hummocks very
abundant
these irregular mounds
5-10 m. tall in size classes.
L. caerulea, not Peltandra, is
rather much, -
fairly typical of
Sphagnum bogs.

Westward crossed
wade separated, open
bog with pools
and large peat mound.
largely open around
rocks and irregularities
in substratum
considerable herbaceous
flora in mounds.
Carex aquatilis, etc. in water

Then into white spruce
wood open forest
to semi-savanna.
hummocky masses
of Cladonia, Peltandra
greenlandica
Wood almost half
bare. This on slight ridge

Then area is almost
pure open larch with
dense understory of
dwarf birch 1-1.5 m tall
and up to 5-8 m.

Deep brown mottled
Tomentypnum nitens
this on calcareous
substratum. Many
herbs.

Then slight elevation
and Cladonia disjuncta
substratum, more
open, more white
spruce.

Then a more
shallow pond on
calcareous material
with a few
white spruce.

Then a more
open area with
1-1.5 m tall, up to 5-8 m
and larch. Rich in
greenlandicum. Above
large, mossy Cladonia
tree. 10-15 cm high
well formed. 2-4 m
or 5-6 m apart.

Wetland this becomes
almost closed, the
larch tallest, more white
spruce, but most
of moss larch.

Then forest continues
west of the area for a hundred
m or more then thins out
into halix-betula scrub.
with open areas of
larch and Empetrum.

The scrub is more or
less closed, about 1 m tall.

Then change to halix
scrub, which thins
out until there is a
marsh of Poa, Agrostis,
and Puccinellia, with
Empetrum and larch.
in wet spots Ranunculus
Potamogeton, Triglochin
and larch in pools,
and in the grassy
parts Ranunculus
Festuca arvensis, Polygonum
viviparum, and other
herbs. Swarms of mosquitoes
and black flies.

Tidal channels and
round pools very common.
either with firm bottom,
sometimes rocky, or
with deep stinking mud.
Blue green algae
abundant in pools
and channels.

The low land near Churchill river has been slowly emerging, so that the youngest surface is nearest the river. The tidal range is said to be 15, so that a considerable portion of the tidal flats have no vegetation. Back a bit, but still in area drained by tidal channels is a marsh of *Poa-lygostes*. *Puccinellia*, with various other herbs - *Carex* spp., *Aster juniperifolius*, *Engelmannia*, etc.

Back a distance a few small lakes are scattered in. Landward becomes closed willow scrub, with much water.

Where this is opposite front the willow scrub changes to *Betula glandulosa*. This, landward, has more and more *Carex*. These become taller, and admixed with *Picea glauca*. The *Betula* persists as a conspicuous shrub layer. This, back of the *B. g.*, becomes a closed forest of fair sized trees. In

a few spots the ground is slightly higher, and the forest is open with a ground layer of *Cladonia* very deep. In low spots the forest is almost pure larch. Other lower spots are heavily dominated by *Carex aquatilis*.

Farther back, on still older ground, peat has accumulated to a considerable depth, and developed considerable acidity. Here *Sphagnum* is dominant and *Picea mariana* has replaced *P. glauca* except immediately along banks of streams.

This open forest on deep peat is the characteristic vegetation of the Hudson Bay lowlands.

Presumably, the above sequence from lowland to upland represents a succession.

Aug. 12 - Thompson, 1. Richelieu

Spence forest, rather closed, with moss on ground and a well developed ~~low~~ shrub layer of *ledum groenlandicum* about 0.5 m. high. Trees to 10 m. or more, very narrow and spine-like.

Aug. 11 - 3 mi s. of
Churchill
in Estuarine marshes
along Churchill River.

- 40079 *Salix brachycarpa*
scattered in grassy marsh
- 80 *Salix*
scattered in grassy marsh,
more abundant ~~landward~~
- 81 *Aster junciformis*
common
- 82 *Ranunculus punctatus* ~~var. ovalis~~
submerged in small ponds,
~~readily floating~~
- 83 *Hierochloa odorata*
common
- 84 *Calamagrostis canadensis*
common
- 85 *Potamogeton filiformis*
var. *borealis*
common on bottom of small muddy pool
- 86 *Hippuris vulgaris*
common in muddy pools
- 87 *Festuca rubra*
common
- 88 *Carex machenzeyi*
local
- ~~89 *Betula glandulosa*~~
same in ~~low~~ wet
larch forest with some
white spruce, on calcareous soil.
- 89 *Betula glandulosa*
abundant, forming shrub layer

low shrub.

shrub: m. tall

rays pinkish.

leaves floating. flowers
and fruits emerged, petals yellow

stiff-leaved part emerged

rather depressed and
spreading, spikelets
light green.

shrub 1 m. tall.

- 40090 *Juncus albens*
occasional in wet places
- 91 *Salix vestita*
occasional
- 92 *Carex gynocrates*
occasional in wet spots
- 93 *Juncus balticus* var. *littoralis*
local in wet places
- 94 *Carex vaginata*
in wet places
- 95 *Salix*
in edge of opening
- 96 *Habenaria hyperborea*
rare in wet openings
- 97 *Scirpus hudsonianus*
common in wet openings
- 98 *Simulacrum trifolium*
occasional in wet moss
- 99 *Kobresia*
occasional in wet places

40100 (moss) *Polypodium complanatum* var. *alpestre*
abundant in slightly elevated dry open places

Aug. 11 - 1102. From 1000 ft. alt. 1200 ft. alt. Churchill

- 01 *Carex vaginata*
on peat bogs
- 02 *Cyrtopodium annatum* var. *virgatum*
common in deep moss
- 03 *Salix laevigata*
common in

branches ascending.

culms terete.

shrub 1.5 m. tall

flowers pale green.

corolla white

fruit immovate.

creations.

5m

12m

rhizome buried in moss, branched

small tree 4 m. tall.

40104 *Menyanthes ciliolata*
in open pond in depression

~~same~~

same in open treeless
~~peaty~~ area, fairly
recently burned,
with scattered pools
and wet depressions.

2 05 *Salix*

1 06 *Rhododendron lapponicum*
common

2 07 *Carex capillaris*

1 08 *Pedicularis labradorica*

1 09 *Poa*

common

1 10 *Epipsanthes romanzoffiana*
rare and local

2 11 *Saxifraga aizoides*
very local

4 12 *Myrica gale*
local around pools

1 13 *Vaccinium (Oxycoccus) quadrifidum*
in wet depressions

1 14 *Pedicularis lapponica*?

1 15 *Pedicularis*

occasional *multicaulis* ?

1 16 *Stellaria longipes*
occasional

1 17 *Andromeda polifolia*
occasional in peat hummocks

1 18 *Arctagrostis*
occasional

1 19 *Criophorum angustifolium*
locally common

same area

depressed shrub,
leaves glaucous beneath

tuft

corolla cream white,
in 2 spiral ranks; fragrant.
petals uniformly deep
bright yellow.

prostrate, flowers pink,
filaments black.
past flowering
past flowering

fruits rose-purple.

erect, solitary

deep-rooted

40170 *Carex limosa*

occasional

21 *Vaccinium vitis-idaea*
var. *minor*

common in dry peat

22 *Vaccinium uliginosum*
very common23 *Cerastium album*
occasional24 *Draba glabella*
common25 *Draba incana* var. *confusa*
common in gravel bars
also seen in peat.Aug. 12 - Wabowden
in open sloping meadow26 *Aster*
occasional to common27 *Aster*
rare28 *Aster*
commonsame - in marshy spot
along railroad.29 *Mentha*30 *Equisetum*

same - open sloping meadow

31 *Lactuca pulchella*
rare

very depressed.

leaves dull green; fruit
immature

erect, flowers white

seed 763

In 2350

rays white, disk yellow.

rays deep lavender, disk
- pale yellow.
rays lavender, disk yellow.erect,
deliciously fragrant.
- flowers lavender
erect.erect, somewhat glaucous,
flowers blue-violet.

40132 same - railroad embankment
Cornus sericea L.
 common

33 same - ~~in~~ wooded
 margin of Letting Lake
Stachys
 common

40133a *Emblancina*
 in partly coniferous forest,
 Thompson

Aug. 13 - Winnipeg
 Kildonan Park, along
 Red River.
 have for + herbarium 73
 continues to river bank
 but there on lower
 cut bank is a group
 of trees

34 *Maianthemum canadense*
 under herb layer in mixed broadleaf forest

35 *Ranunculus*
 rare in ^{open} wooded place along path
 on river bank in halix woods.

36 *Galium triflorum*
 under herb layer in mixed broadleaf forest

37 *Valeriana*
 in shrub layer in mixed
 broad leaf forest near river

shrub 0.8 m. tall, fruit
 fleshy, white, branchlets
 and inflorescences red,
 with white.

erect, without strong odor;
 flowers purple, lower
 lip with maroon
 markings, these outlined
 with white.

Actaea pachyloba is
 locally dominant in herb
 layer *Maianthemum* and
Galium triflorum form a very
 scattered ground layer.
Rubus laciniatus local
 near above herb layer.

Soil a very dark gray compact
 silt, cracking when dry.
 Flood in 1950 covered this area to about 10 ft.
 stands

flowers green.

prostrate, branched from base.

shrub 1.5 m. tall; fruit
 immature.

Aug. 14 - train trip, CNR, from Winnipeg to Montreal.

East of Winnipeg vast plains of black soil, under cultivation except for scattered fairly sizeable patches of small aspens. Some of the fields are wheat, some pasture, a few of flax. Some are not planted. Much standing water.

Along the railroad a strip of weedy prairie, colorful with Helianthus, Solidago, etc., with a marshy ditch down its center with patches of Typha.

Hordeum jubatum very prominent as a weed.

Planted trees as wind breaks around farm sites and along some roads.

(Anola)

Some areas of prairie, patches of willow thicket and much greater proportion of aspen, but this very degraded.

Then almost solid aspen with small areas of pasture. Some areas of solid young aspen sprouts.

Then more farming area but soil grayer and with small boulders. Some quercus and a very few larch mixed with aspen. Large areas of unevenly brushy abandoned pasture land around Vivian. Soil lighter gray, dark surface layer very thin. Willow scrub very common.

Then large farming area but with aspen patches.

(Nouris?)

Spruce forest, alternating with fair sized aspen. Some *Pinus banksiana*, thus mostly mixed with aspen. Some *Populus balsamifera* mixed in, too, and some larch.

Pasture with patches of willow and invasion by willow. Patches of larch, spruce, etc.

Some sparse parkland, mixed coniferous forest, mixed *Populus* spp. and coniferous forest, aspen forest, willow brush, fire scars all in a mile.

Lythrum salicaria in
ditches.

Pastures invaded by balsam
mixed populus-conifer
wood. A few small
clearings mostly
apparently abandoned
fire scars of various
ages. Conifer forest -
aspen forest mosaic.
Pine very scarce, spruce
abundant.

(Lewis)

Large areas of uneven
aspen-willow thicket and
conifer forest locally
gently killed by fire.

(Elma)

Mosaic of conifer & aspen.
Large burned areas
with bare poles.

Exposure of Canadian
shield rocks, ground
down to gentle relief.

Around Lac Seul some
rocky peaks and a few scattered
rock. Vegetation on rock
outcrops very sparse.

Conifer forest more contin-
uous. Pines & spruces
dominant on rock outcrops.

An area near Wade
where well developed
aspen forest and
open aspen forest has
been largely knocked
down, bent over, or
snapped off a few feet
above the ground, some
pine also; this done by
a severe storm a year
or two ago.

This country is rolling,
the low hills are worn
down outcrops of Laurentian
rocks, alluvial deposits,
lakes, ponds, and bogs
between them. The
vegetation a mosaic
of forest types, ~~the~~ domi-
nated by aspen, spruce,
and jack pine. Occasional
meadows and bogs.

~~(Habitat)~~ Minakid

Lakes, bogs, well developed
forests on slopes. Same
general mosaic of
boreal forest. Aspen
seems much more
abundant in most
areas than conifers.
Lakes have bog succession
in various stages, from
Nymphaea beds to dry
land. Typha.

Some rock outcrops relatively bare of vegetation.

In cuts through the hills the general rock appears to be a massive dark coarse granite (?) with much hornblende, but abundant, intruded by a very coarse pink granite or pegmatite.

(Redditt) Meadow with beautiful display of flowers. High worn rock ridge with pines in joint cracks. Families weeder along trail. - Molluscs, *Patulaea taphodes* *salina*, *Conchus arvensis*, *Aporrhya canaliculata*, etc. Fine bog in edge of lake.

Some birch mixed in aspen forest. Also considerable *Populus balsamifera*, some pine, occasional groups of spruce. Little or no spruce forest. Fair areas of pine forest and scattered patches of pine in aspen forest. Many lakes. Low line of these alternate from abrupt rocks to low boggy wooded shores.

The pines are apparently both *P. banksiana* and *P. resinosa*, the latter more on rocks and heavier in appearance, but still with short needles.

Eastward the hills become higher and pines much more abundant. Spruce seems only incidental and mostly in low alluvial areas around lakes. *Pinus resinosa*? much more abundant than *P. banksiana*. ^(possibly only from P. banksiana) *P. banksiana* becoming more common, but still not abundant.

Some small spruce in bogs around lakes.

Pinus strobus appears in some abundance on the rock bluffs above a very long lake north of track west of Mc Intosh. Canyon is on s. shore of this lake. (possibly Clay Lake).

Some moraine deposits. Here are more birches, also all three pines and white spruce as well as much aspen.

(Red Lake Road)

lower relief. Spruce forest
pine and aspen on rocks.
some dense on moraine
material.

Tsuga locally common
east of here.

Sharp alternation between
well-developed spruce
forest on alluvial material
and jack pine on
rocks. Where not burned
Where there have been
fires a mixture of
aspen and balsam poplar.
scattered young spruce.
in some places a definite
under story of spruce.

At Amesdale a large
meadow, very colorful
with *Solidago*, *Epilobium*,
etc. surrounded by aspen.
Eastward a mosaic of
aspen and white spruce.
some patches of jack pine.
Moraine material.

For several miles east
and west of Burnstown
are extensive sand flats
with dense spruce forest
some lakes. Pines banked
on higher spots. Some
areas of young aspen.
then pale sand.

Then highly Laurentian
topography and vegetation.
Some moraine gravel.

Aspen forests tend
to have a shrub layer,
often quite dense. *Acer*
spicatum.

A large lake with a
sawmill, log rafts,
and a settlement. Gulls
and terns on the lake.
(possibly Webster?).

Then aspen with a
dense under story of
spruce on flat ground,
mixed aspen and jack
pine on low moraines
and rock hills.

Acer spicatum frequently
forming ~~under story~~,
shrub layer, spruce
frequently forming
under story.
Soil generally gray.
(Pelican)

Meandering river
with wide marshy
margin.

Large and very irregular
lake on left.

(Sioux Lookout)

1197'

40139

Euphorbia corollata

silt embankment along railroad
prostrate, leaves with red spot
gland narrow, narrow white margin

East - rolling country,
rocks, loess, ~~some~~ ^{some} ~~more~~
mixed forest largely
aspen. considerable jack
pine. Alder thickets on
fairy flats some
larch. Prominent
spruce understory in
aspen forests.

Flat area of very
irregular spruce with
some aspen - peaty soil,
low growth in openings
largely alder.

Rock outcrops here
seem to be a greenish
jointed dark green rock.

All mixed aspen
and pine forest on loose
knolls - bigger aspen
than have been usual,
also some balsam poplar.
(Superb quality)

Mostly loess soil -
some sort of fairly large
forest but mostly
aspen and balsam poplar
larch, too. Scattered
patches of pure
spruce, also tall willow
scrub, some alder. Mostly
aspen, some birch.

In well developed aspen
stands an aspen spruce

shrub layer, or more rarely
a spruce understory, with
considerable balsam fir.
(Roanet)
Fir quite common near
lake.

In general region of Savant
Lake and from there to
Armstrong conifers are
generally dominant.

On higher ground there
are dense pure stands
of jack pine on lower
ground spruce - fir.
Occasional patches of
aspen.

Same pattern east
of Armstrong. Mainly
on moraine deposits.

Considerable jack pine
even on level ground,
apparently on sand.
Occasional Carex bogs,
some with Typha patches.
Terrain rolling but
apparently no rock
outcropping. Mostly
sand.

This is apparently the
northern edge of the
Nipigon Forest Reserve.

Then a large area of
almost flat country
mostly in dense spruce - fir forest.

In the midst of this just west of Willet, a small sharp rock hill protrudes to about 70 m. above the surrounding country.

A few miles east the Laurentian rocks again emerge. The forest on them is mostly aspen with some admixture of conifers, or with a well developed under story of spruce and fir. (Ferland)

Then more flat spruce, spruce-bunch, and spruce-fir, or a mixture of all three.

To south a range of low flat topped mountains.

The pattern of spruce-fir - tan areas ~~with~~ with occasional patches of aspen continue eastward for some distance. Some large heath and bog areas, with *Sedum*, invaded by *Salix* and *Abies*.

Jack pine seems to have dropped out. The area is very flat. Where the ground becomes rolling as near ~~Tashota~~ Tashota the

pine reappears, but very locally. East of Tashota some exposures of Laurentian rocks - jack pine abundant here.

Large marsh with *Carex*, *Typha*, open water and low *Salix* scrub; near Redmond.

Relief increases east of here. Conifer forest continues but with considerable aspen.

Night

Aug 15 - from west of North Bay.

Mixed birch, aspen, sugar maple, and conifer forest very degraded - cutover thickets and openings.

Distribution of different conifers very uneven. *Abies* is most general. *Pinus resinosa* and *P. strobus* scattered on slopes.

Spruce uncommon except in low places.

Acer rubrum first noticed west of Kiashk, already turning red. *Corymbia* also noticed from about here.

Pteridium very common as ground cover, both in open and in thin aspen and birch forest. Occasional pure stands of *Pteris* *papillifera*. Some birches probably *B. populifolia*.

Much cut-over and burned-over country. Ground cover in this is a mosaic of *Pteridium*, *Comptonia*, *Vaccinium*, some grass & cares. Sparse crooked stand of birch and aspen.

In places where there is a good stand of aspen a solid understory of fir and spruce is coming up under it.

Toward Sarenty the terrain becomes low mountainous. *Thuja* seen for first time; not common.

40139

Aug. 19 - Brent

Dierwilla linearis

weedy thicket along railroad

3 mi. S. of Brent 1 mi.

1088

40100 - 194 2-4 mi.

40100 5 mi.

40101 - 25 5-10 mi.

3 52
3 4
110

Pteridium very common as ground cover, both in open and in thin aspen and birch forest. Occasional pure stands of *Pteris* *papilionifera*. Some bracken probably *P. populifolia*.

Much cut-over and burned-over country. Ground cover in this is a mosaic of *Pteridium*, *Comptonia*, *Vaccinium*, some grass & cares. Sparse or open stand of birch and aspen.

In places where there is a good stand of aspen a solid understory of fir and spruce is coming up under it.

Toward evening the terrain becomes low mountainous. *Thuja* seen for first time, not common.

Aug. 19 - Brant

Diervilla lonicera

weedy thicket along railroad

low shrub, flowers yellow

Aug. 22

1st. stop

7 mi. S. of Napierville
 Beech-maple forest
 somewhat logged over.
 the ground being up,
 apparently the top soil
 has been removed,
 trees up to 3(4) dm. diam.
 perhaps 30 m tall,
 mostly under 1 dm.
 diam. and lower.
 The ones tending to
 be larger and less
 abundant than the Fagus.
 a few Quercus rubra
 and Q. prinus. ~~a~~
 small sugar in
 understory.

Layering in trees
 not very clear. Seedlings
 of Fagus, Taxus,
 Acer, Tilia, Cornus
 etc. common - a rich
 ground herb layer.
 The ground here is glacial
 till with rocks ranging
 up to 0.7 diam.

2nd.

Rather large marsh
 with herb layer about
 1 m. tall, thin patches
 of Phragmites to 2 m.
 Some invasion of Populus
 tremuloides Betula Veberiana
 Ilex sp. acer rubrum, Cornus canadensis
 Rich composition, more
 broad leaved than grassland.
 Anemone Thelypteris etc.
 forming a lower story.
 Aster, Eupatorium, Solidago
 flowering abundantly.
 A ditch suggests that
 this ~~the~~ marsh has been
 somewhat drained.

3rd St. Bernard de Lacolle

St. Jean Co.

Marsh of ~~herpes~~ ^{St. Jean Co.} ~~georgianus~~
 with patches of Eleocharis
 calva. Bidens. Mimulus.

with 6 mi. S.W. of Napierville
 Peaty marsh with Phragmites
 more abundant locally than in
 1st, otherwise similar but less
 invaded by shrubs. Cleared
 area of wet marsh along road.
 with Thelypteris, Geranium
 etc. in and along ditch.

5 mi. s.w. Napierville

500' bog: sphagnum,
with a rather dense
layer of *Cedrus* ^{*Calmia*} and *Chamae.*
Lophoc. 0.5-1.0 m. tall, a
somewhat more open layer
of *Pernandrus* and
Vaccinium corymbosum
1.5-2 m. tall scattered
Betula populifolia 3-5
m. tall and scattered
Pinus and ~~few~~ *Pinus*
mariana 3-8 m. tall.
also a few *Abies*.

Many dead trees & shrubs
apparently from fire.

This surrounded
by a belt of low woods
mostly *Betula* + *Populus*
Pinus abundant inward.
Much sphagnum.
Vaccinium corymbosum
& other shrubs.

160'

South of Montreal
on the plain the fence
rows are variously
brushy and with more
or less abundant elms.
Fields are long and
rather narrow, oriented
almost e.w.

Aug. 22 - 3 mi. ~~to~~ w. of
Napierville

in beech-maple woodlot

40145

Mitchella repens
uncommon

1

41

Thelypteris
local

2

42

Aralia racemosa L.
occasional

1

43

Epipactis helleborine
occasional

2

44

Botrychium virginianum
common

1

45

Osmunda sensibilis L.
common, locally abundant

2

46

Urtica perfoliata
common

1

47

Hepatica acutifolia
common

1

48

Urtica?
occasional

1

49

Tiarella
occasional

3

50

~~*Adiantum*~~ *Athyrium*
common

1

51

Phryma
occasional

1

52

Dryopteris marginalis
in wet ~~forest~~ muddy depression

1

53

Lycopodium obscurum
very local, abundant on humus

1

54

Botrychium multifidum
rare

1

55

Lycopodium complanatum
local in wet muddy depression

190'

prostrate, leaves dull green,
with pale midrib, paler
beneath; all seen sterile.

herb branched once or
twice; fruits turning red.

~~St. Jean Co.~~ ^{see}

1 3 mi. w. Napierville
125-~~170~~ 170' ^{ing}

2 6 ... s.w. 11 51-
170'

St. Jean Co.

5 ... s.w.

Napierville Co.

St. Bernard de

Lacolle

175' ⁹⁹⁰
(St. Jean Co.)

erect blade well above
ground level.

flowers white, anthers
swollen, stamens filiform

Aug. 22 - 3 mi. ~~to~~ W. of
Napierville

in beech-maple woodlot

40140

Mitchella repens
uncommon

1 41

Thalictrum

2 42

1 43

2 44

1 45

2 46

1 47

1 48

1 49

3 50

1 51

1 52

in wet ~~forest~~ ^{shrub} depression

1 53

Lycopodium obscurum

very local, abundant on ^{humus} ~~rock~~

1 54

Botrychium multifidum

rare

1 55

Lycopodium complanatum

local in wet ^{shrub} ~~forest~~ depression

190'

50'

prostrate, leaves dull green,
with pale midrib, paler
beneath; all seen sterile.

herb branched once or
twice; fruits turning red.

said to be introduced
from Europe.

all past fruiting

sterile at this season

saplings or suppressed
trees, only, seen.

all past flowering and
fruiting.

shoots erect.

erect, blade well above
ground level.

flowers white, anthers
swollen, stamens filiform.

Aug. 22 - 3 mi. ~~sw.~~ w. of
Napierville

in beech-maple woodlot

40140

Mitchella repens
uncommon

1

41 *Thelypteris*
local

2

42 *Asarum racemosum* L.
occasional

1

43 *Epipactis helleborine*
occasional

2

44 *Botrychium virginianum*
common

1

45 *Oxoclea sensibilis* L.
common, locally abundant

2

46 *Urtica perfoliata*
common

1

47 *Hepatica acutifolia*
common

1

48 *Asarum*?
occasional

1

49 *Tiarella*
occasional

3

50 ~~*Adiantum*~~ *Athyrium*
common

1

51 *Phryma*
occasional

1

52 *Dryopteris marginalis*
in wet ~~flat~~ muddy depression

1

53 *Lycopodium obscurum*
very local, abundant in hummock

1

54 *Botrychium multifidum*
rare

1

55 *Lycopodium complanatum*
local in wet muddy depression

190'

35.0

prostrate, leaves dull green,
with pale midrib, paler
beneath; all seen sterile.

herb branched once or
twice; fruits turning red.
said to be introduced
from Europe.
all past fruiting

sterile at this season

saplings or suppressed
trees, only, seen.
all past flowering and
fruiting.

shoots erect.

erect, blade well above
ground level.
flowers white, numerous
swollen, stamens filiform.

- 40156 *Galium*
rare in wet meadow depression
1 57 *Corylus*
uncommon
1 58 *Hernandea*
uncommon

Aug. 22 - 5 mi. s.w. of
Napierville
in open sphagnum
swamp with barix

- 1 59 *Oxocera rotundifolia*
local
1 60 *Kalmia ~~latifolia~~ angustifolia*
local in shrub layer
1 61 *Eriophorum virginicum*
rare in semi shade
1 62 *Viburnum cassinoides*
rare
2 63 *Kalmia angustifolia*
~~common~~ local in shrub layer
3 64 *Carex trisperma*
common
1 65 *Vaccinium*
common
2 66 *Saxifraga purpurea*
occasional
1 67 *Chamaedaphne calyculata*
abundant, dominant locally
in shrub layer
2 68 *Andromeda glaucifolia*
local in shrub layer
3 69 *Kalmia polifolia*
common in shrub layer

g. rotata

shrub

shrub, fruit immature.

glandular hairs, leaves
red.

shrub 1.5 m. tall.

leaves glaucous beneath.

shrub, granules red,
fruits red green.

shrub 0.3 m. tall,

leaves glaucous beneath,
cespitose and scattered

prostrate, fruit
whitish to reddish, acid.
leaves green, scape erect.

shrub 0.7 m. tall.

leaves white beneath.

low shrub, 0.4 m. tall,
leaves white beneath.

- 40170 *Andromeda groenlandica*
dominant in shrub layer
71 *Rhamnus*
rare
72 *Paropanthus mucronata*
common

73

Aug. 22 - 6 mi. s.w. of
Nahieville

on muddy roadside

- 73 *Alnus*
occasional in ditch
74 *Galium brevifolium*
rare
75 *Clostrum aculeatum*
common in wet ditch
76 *Odontites*
rare
77 *Gerardia*
occasional
78 *Gerardia*
very common
79 *Ludwigia palustris*
in wet ditch
80 *Polygonum punctatum*
common in ditch
81 *Hypericum terrestris*
local

same, in densely vegetated
broad-leaf marsh

- shrub 0.7 m. tall, very
erect.
shrub 1 m. tall; fruit
green.
shrub 1.5 m. tall, ~~to~~
leaves somewhat pale
beneath; fruit a dull
saturated red.

flowers dull creamy pink
white.

flowers rose ~~pink~~ purple

leaves purplish; flowers
rose purple

prostrate

stems red; flowers
white.

stems but with
elongate bulbils for vivipary.

- 40182 *Prenanthes*
 2 83 *Solidago purshii*
~~uncommon~~
 1 84 *Ferniera coerulescens*?
 rare invader
 3 85 *Thelypteris palustris*
 common
 1 86 *Galium concinnum*
 occasional
 3 87 *Abies rugosa*
 common invader
 2 88 *Viburnum tufifolium*
 uncommon invader
 3 89 *Betula*
 occasional invader
 2 90 *Eupatorium*
 abundant
 1 91 *Hypericum*
 occasional
 3 92 *Campanula aparinoides*
 common
 2 93 *Myrica gale*
 common
 2 94 *Hysopus americanus*
 occasional
 2 95 *Chelone*
 occasional
 2 96 *Aster*
 common
 2 97 *Cornus amomum* Mill.
 common invader

- flowers pink, involucre
 narrow.
 heads bright yellow.
 shrub 1 m. tall, leaves
 glaucous beneath; stems,
 fronds erect.
 climbing, flowers white
 shrub 1.5 m. tall.
 shrub 2 m. tall.
 bracts orange-red.
 shrub 2 m. tall.
 plant 1 m. tall, stem
 reddish, hollow; heads
 flowers purple.
 young fruit red.
 flowers lavender
 shrub 1 m. tall, very
 aromatic.
 aromatic; flowers lavender
 herb 1 m. tall.
 ray, white, disk pale
 greenish yellow.
 shrub 1 m. tall.
 fruit bluish

40198 *Potentilla fruticosa*
common

997 *Spiraea*

2001 common

01 *Phragmites communis* L.
common, sparse

Aug. 22 - St. Bernard
de Lacolle, St. Jean Co.
in somewhat desiccated
~~sandy~~ barpus marsh

02 *Bidens*
common

03 *Eleocharis calva*
abundant locally,
forming dense sod.

Aug. 23 - Rougemont
low sandy pine woods.
Stand of *Pinus strobus*
mostly rather small
but up to 30 m. tall
with some *Tsuga*,
Asperula, *Myrica*, *glauca*,
Petula alleghaniensis,
few shrubs except
scattered saplings of
maple, *Tsuga*, *Petula*
populifolia, *Prunus* sp.

Thin ground cover
of *Geranium*, *Dryopteris*
intermedia, *Viola* sp.
Mitchella, *Polygonatum*

shrub, 1 m. tall, flowers
bright yellow.
shrub, 1 m. tall, flowers
white,
erect.

erect, not small
yellow rays.

Uvularia, ~~etc~~ *Carex*, etc
Local colonies of
Equisetum spp.

Nearby a second growth
beech-maple forest, then
Tsuga around a spring
area with undergrowth
of *Taxus* and abundant
ferns. Here *Osmunda*,
Onoclea, *Dryopteris intermedia*,
Thelypteris noveboracensis,
Equisetum sylvaticum,
etc. Many broadleaved
herbs.

Fine wood of *Alcega
magnifica* var. *glauca*,
Tilia, *Tilia*
up to 30-35 m tall
mostly not more than
3-4 dm thick, much
young growth, well
undergrowth - on
lower gentle north
slope of mountain.

Spacing of *Alcega* trees
5-10 m. *Tilia* local in undergrowth.
Dense growth of seedlings
of *Alcega* on ground.

Urtica, *Ethyrus*,
Adiantum abundant
on ground.

A few large *Tilia*.
Much *Alcega* tapping
done, esp. lower down.

Panax quinquefolia
rare in this site.

Saxifraga, *Impatiens*,
Polygonum frutescens dominant
in wet places.

Lower down *Tilia* is
dominant locally.

~~Aug. 23~~ Aug. 23 - S.E. of Mont
Rouge

in *Pinus strobus* forest on deep sandy high ground

40204

Dryopteris

common

E. end of Rougemont
slopes and ledges and
small cliffs of
Ordovician limestone
capped by a coarse grained
porphyry. On the slopes
and top is a rather thin
forest of *Alcega* and *Quercus*
rubra. A rather rich
undergrowth of herbs
and tree seedlings.
Various ferns on the
rocks and *Dryopteris*
marginalis in many
sites.

fronds ascending

- 40205 *Lycopodium complanatum*
var. *flabelliforme*
very local
- 06 *Lycopodium clavatum*
very local
- 2 07 *Lycopodium annotinum*
very local
- 2 08 *Lycopodium obscurum*
very local
- 2 09 *Maianthemum canadense*
very common generally
- 1 10 *Pteridium aquilinum*
var. *latiusculum*
very common
- 1 11 *Mitchella repens* L.
very common
- same loc. - in dense
sage grove
- 1 12 *Equisetum arvense* ?
- 2 13 *Lycopodium lucidulum*
common, especially in
low places
- 1 14 *Medeola*
occasional
- 3 15 *Thelypteris*
common locally in damp
places
- 1 16 *Equisetum*
in low moist places
- 17 *Taxus canadensis*
abundant, forming
low undergrowth

rhizome creeping,
superficial; sterile.

creeping; sterile.

creeping, branches
ascending, cones erect.
stems erect from
underground rhizome
berries reddish,
finely white dotted
rhizome deeply buried.

prostrate, ^{pink} dull green
mud-like light

branches erect, leaves
dark green.

bracts red at base

branches ascending,
fruit red, fleshy.

same - on open sand
40718 *Aralia hispida*
locally common

19 *Spiraea*
locally common

Aug. 23 - north base of
Mont Rouge

in mature beech-maple forest
1 20 *Caulophyllum thalictroides*
occasional

3 21 *Athyrium thalictroides*
common locally

2 22 *Thelypteris hexagonopteris*
common very locally

1 23 *Adiantum pedatum*
common generally

1 24 *Athyrium filix-femina*
common generally

Aug. 23 - east end Mont Rouge
rather dry thin beech-
maple forest on limestone
ledges and slopes

2 25 *Dirca palustris*

~~*Spiranthes*~~

1 26 *Cystopteris fragilis*
very common

erect (other plants large)
fruit blue-black on
red inflorescences.
shrub 0.3 m. tall.

fruit blue.

fronds almost erect

fronds spreading to
almost erect.

shrub, flowers yellowish
green. All flowering
possibly result of
severe drought followed
by rain.

all seen very young,
sterile.

40227 *Asplenium trichomanes*
occasional on rocks

28 *Woodsia*
common ~~at top~~ on rocks
at upper altitudes

297 *Dryopteris marginalis*

30) very common

31 *Allium tricoccum*
very common

same - in apple orchard
32 *Spiranthes cernua*
in full sun in grass

Aug. 30 - foot of
St. John's Mt., Huntingdon Co.
in rich wooded bottom land

72a *Mitchella repens* L.
occasional

376 *Pineo palustris*
occasional

72c *Asplenium platyneuron*
rare

varying greatly from
tuft to tuft

variable in leaf outline
and outline

leafless at this season,
bulbs white, odor very
strong.

flowers white,
almost without odor.

prostrate, fruit red.

Aug. 20 - Stone Valley

Silurian shales bounded on ~~one~~ one side by Silurian sandstone ridge. on other by a Devonian ridge.

Valley bottom shall broken down into a rather impervious clay, poorly drained.

Mixed forest on slopes.

Shrub areas have been cleared and cultivated.

Silurian ridge tops never cultivated.

Soils on shales seriously eroded off.

Logging was selective small scale, or else clear cutting for charcoal.

Three main vegetation classes: - poor forest after selective logging, forest after clear cutting on sandstone second growth ^{after 100 years} after farming.

Shales very dark colored - yellowish rather calcareous - rept. quite acid. Lamination of limestone.

Slope forest of *Pinus strobus*, *Taxus*, various hardwoods. On ridge top hardwood forest.

The forest is being managed for multiple use - watershed, timber, wildlife, recreation.

Valley bottom of alluvium on which forest was growing, but was cleared, along with ~~hills~~ slopes. Clay came down and formed a blue layer 2-4 dm. thick, this overlain by more alluvium. Man-made ~~swamp~~ ^{marshes} due to the impervious clay deposits.

Manmade marsh - flat area with a mosaic of *Typha*, *Solidago*, *Alnus*, etc. on very shallow mud 2-8", on impervious clay layer. Being invaded by pine, etc. A row of trees across it represents an old fence row.

Well developed alder thicket is only 11 years old, spread from a line of alders in 1949 along an old drainage ditch.

Pinus virginiana
stand to about 8-10 m.
tall, up to 1 dm. dbh.
1-3 m. apart.

Has invaded a *Quercus*
barren vegetation, etc.

Chimney, was *Quercus* in 1942

~~longer~~ young pine in 1945.

In ground *Potentilla*
simplex?, *Antennaria*
pedicularis, *Veronica officinalis*
Rubus sp., *Holidago* sp.

much young *Pinus* *virginiana*
some *Cornus florida*, *Vaccinium*,
a few ^{small} seedlings, patches
of *Polytrichum*, *Urtica*
(few), *Asplenium platyneuron*.

After chimney, these stand
will be strongly invaded
and on the way out in 10 years

Organic layer very thin
1-2 cm. incl. litter.

Another area of same
age very irregular, a few
older trees, with progeny
of all ages and open space.
Much thicker undergrowth,
more diversified.

On some slopes a
rather pure stand of
pine, more *Pinus virginiana*
some *P. strobus*, very little
sunderly growth but much
moss & *Cladonia*.

Nearby a flat area
with much larger
trees and a very
prominent shrub story
2-4 m. tall of *Acer rubrum*,
Cornus florida, ~~etc.~~ with
smaller seedlings, 1-2 m.
or less of *Quercus* & *Larix*,
a little *Pinus strobus*
and *Juniperus dentata*
about 4 m. tall. ^{few} *Pinus*
^{1-2 m. tall} *virginiana* &
much *Vaccinium* &
Urtica on ground,
thin organic layer.

Some patches of *Quercus* *alba*.

Open rather flat field
with clay pan - once an
attempt was made to break
this by deep plowing, followed
by planting to various
conifers, this unsuccessful.
The trees are largely still
alive but have not grown.
Now the field is a dense
herbaceous vegetation of
Holidago spp., *Aster einkorn*,
Panicum *capitatum*, *Prunella*,
Eupatorium, *perfoliatum*, *Trifolium*,
Conium, *Scirpus* sp., *Prunella*,
some ~~seedlings~~ *Pinus*, *Panicum*
fragaria, *Danthonia*, etc.
1 m. ± tall.

Carex

After
chimney
stands

Rd. bet ^{also} Macleay's Fort
 + Huntingdon, foot of Stone Mt.
 narrow flat valley
 bottom at boundary
 bet. Devonian and Silurian.
 A thin limestone is lowest
 Devonian member.

Here is a very rich
 deciduous woods, with
 many tree species and
 very rich herbaceous
 flora. Resembles cove forest
 of south. Many ferns.

Tree *Fagus* sp.
Acer nigrum & *glabrum*
Betula lenta
V. lutea
Carya 4 sp.
Quercus rubra
Q. alba
Q. velutina
Acer rubrum
Astragalus
Carpinus
Magnolia acuminata
Ligustrum nigra
Fraxinus americana & *hutchinsonii*?
 Shrubs *Viburnum* & *neglectum*
Ribes
Ranunculus
Hammamelis
Corylus americana

Aug. 30 - Pine Hill, Warren Ridge
West Twp. ~~Harris~~

- 40233 *Pinus eschrenkii*
occasional in otherwise
deciduous semi-open woods

Aug. 30 - Stone Valley, east
of Forestry Camp,
in open pine forest on slope

- 35 *Botrychium dissectum*

rare

- 36 *Lycopodium complanatum*
var. *flabelliforme*
local

- 37 *Thelypteris noveboracensis*
local

- 38 *Hedyotis purpurea* s. *longifolia*
rare in opening

Aug. 30 near Motherbaugh
Marsh

- 39 *Vitis*
around old farm site

Aug. 30 Stone Valley,
east of Forestry Camp

- 40 *Pinus pungens*
common, with other pines,
occasional

- 41 *Lyonia ligustrina*
occasional

445 m
(max)

small tree 5 m tall

460 m
(est.)

forming large mat.
rhizomes superficial,
many cones profliferous.

flowers lavender.

woody vine; fruits
black, sweet
(possibly persisting
from cultivation)

small tree 8 m tall
(cone from ground beneath)
shrub.

Sept. 7 - Sleepy Hollow

wooded bottom-land
42242 *Lindera benzoin*
common

43 *Amphicarpa fructuosa*
common weed in wild-flower
garden.

Sept. 9 - Big Meadows

Swamp is becoming so
overgrown with *Spizaea*
that little open bog is
left. *Caltha* and *Thymianthus*
not found. *Veronica virginica*
past flowering. *Languispa*
still in bloom. *Asplenium*
Spizaea mostly in fruit
but a few sporadic flowers.

Head of 5 deer of varrochase
seen. did not seem at all
frightened.

Long Man Mt.

Solidago canadensis v. *monticola*
abundant in full bloom.
Juncus tripidus? in rock
crevices. *Lycopodium* - selago
in fruit certainly var.
patens, down on cliffs to
right. *Saxifraga nuchauxii*
in fruit. *Pyrus americana* in fruit.

spreading shrub to 5-1/2 m.
tall, fruit fleshy, scarlet
(same plant as #39819)

vine, cleistogamous
flowers common; open
flowers pale lavender
(same as #39843)

Forest of *Quercus rubra*
and various other trees
very dwarfed, only a few
m. high, on summit. becomes
somewhat taller on slopes
toward Skyland. At
parking lot, on rather
level ground it is
about 3 m. tall. Here there
is a large area where
the ground is completely
covered by *Samolus*
claytonioides under the
trees. Forest closed.

Crescent Rock -

The *Potentilla tridentata*
is in good shape, even
on areas that are trampled.
Saxifraga not seen. One
small crevice of *Woodsia*
ilvensis.

Aug. 9 - Big Meadows
in irregular savanna
of small trees on gently sloping ground.

- #0744 *Aster undulatus*
very common
- 2 45 *Aster ~~caudatus~~ pilosus* Willd.
~~very~~ abundant
- 2 46 *Aster corifolius* s. *racemiflorus* Fern.
occasional in semi-shade
- 2 47 *Aster undulatus* L.
occasional
- 2 48 *Aster undulatus* L.
common
- 1 49 *Chamaenerion ~~latifolium~~*
rare, in semi closed scrub
same in openings in
swamps
- 2 50 *Rosa palustris*
abundant
- 2 51 *Galium ~~virgatum~~ ~~latifolium~~*
occasional
- 2 52 *Rosa carolina*
occasional
- 4 53 *Gentiana clausa* ?
very common
- 1 54 *Eleocharis engelmannii*
common in pools

Aug. 9 - Stony Man Mt.
Top of cliffs in rock crevices

- 1 55 *Juncus trifidus* var. *monanthos*
Aug. 9 - Crescent rocks
- 1 56 *Woodsia ilvensis*
in rock crevices in open

1080 m.

plant subglaucescous; rays
pale lavender, disk pale yellow.
ray, white, disk yellow,
turning late reddish.
rays very pale lavender,
disk yellowish white.
rays purple, disk
yellow, turning red.
rays lavender, disk
yellow, turning red.
subscapose, 1.5 m. tall.
panicle dendroid, petals
yellow, fruit erect, immature.

shrub 0.7 m. tall. fruit immature

reclining, flowers white.

fruit turning red.

corolla deep blue-violet.
closed.

1235 m.

~~Sept 7~~ 9 - Ridge bet. Brown Mt. Overlook
and Rocky Mountain, Brown
Mt. Trail

40757 *Aster undulatus* L.
occasional on upper slopes

40758 *Aster undulatus* L.
rare on rocky slope

59 *Liatris*
rare on rocky slope

60 ~~*Habenaria*~~ *Habenaria* ~~*tennisball*~~
abundant locally
on broad ridge top

2 (61) *Hedyotis purpurea* v. *tennifolia*
(62) locally common on
rocky ridge top

1 63 *Carex vaginata* (L.)
local on slope

~~Sept 7~~ 9 - Rocky Mountain
on quartzite ridge

2 64 *Sassafras albidum*
common in *Quercus*
prinus woods below summit

2 65 *Betula lenta*
on rock ledges at summit

3 66 *Amelanchier*
on rock ledges at summit

Slopes covered by a thick
forest, or in upper parts a
tall scrub, basically
Quercus prinus, but with
much *Nyssa* and *Sassafras*

rays deep lavender,
disk yellow, turning red.
rays purple, disk yellow
corollas white, styles
purple.
erect.

leaves green, not at
all glaucous, sterile

small tree, 4 m. tall,
inflorescence red, fruit black.
shrub 3 m. tall.

shrub 4 m. tall.
leaves firm, sterile

~~some~~ some pine, *Quercus*
ilicifolia scattered in
undergrowth, or in
scrub, forming a
substantial part of

cover. Lower undergrowth of *Vaccinium* and *Gaylussacia*. Further common on ground, with *Hedyotis purpurea* v. *tennifolia*, abundant mosses and lichens. Some charred stumps seen in forest seldom more than 1 dm. dbh usually less, more or less coppiced. Sassafras seedlings & saplings common.

Pines commonest at summit, all four species mixed, very stunted, with short needles.

Betula lenta and *Amelanchier arborea* (?) common at summit.

Fire on this area has not been recent but effects still show. It is hard to separate effects of fire from the sparse trees due to poverty of quartzite environment and the good drainage, also the western exposure seems to play some part, though not obvious.

The ridge down from Brown Mt. overlook is similar but forest somewhat taller and more luxuriant, more other oaks, less pine and sassafras.

Black-Rock ~~Trail~~ Trail to *Quercus* prunus with some admixture of *Myrica*, *Pinus rigida*, *P. pungens*. In places very open with a heavy scrub of *Quercus ilicifolia*. The pines and *Quercus prunus* scattered. Closed parts with a dense undergrowth about 0.5 m. tall of *Vaccinium* and other *Ericaceae*.

Tephrosia virginiana common.

Trees generally 7-10 m. tall.

Sept. 10 - Thunder Ridge

^{granite} ridge, *Quercus rubra* forest, with *Taxus canadensis*, *Lorbus americana*, *Asplenium*, *Hamamelis* (flowering), *Rhododendron catawbiense*, etc.

The *Asplenium* shows a step toward *lividum*, some trees being principally in fruit but with a few staminate buds, some with a few fruits, many buds.

Sept. 10 - Thunder Ridge
in *Quercus rubra* forest on
granite ridge.

40767

Hamamelis virginiana

v

common in undergrowth

v 68

Rhododendron catawbiense

common in undergrowth

v 69

Tiarella

occasional on rocks

v

70

Polypodium vulgare m. *virginicum*
common on rocks.

Sept. 10 -

3 mi s. of Fancy Gap, Carroll Co.

Thin forest, largely
Quercus prinus, some *Nyssa*,
Acer rubrum, *Quercus ovata*,
Magnolia fraseri, etc.

shrub 2.5 m. tall.
- petals yellow.
shrub 2.5 m. tall.
leaves white beneath,
branched at base

with an almost continuous
shrub layer 1-3 m. high
of *Rhododendron maximum*?
Rhododendron spp. (Agalax)
Kalmia latifolia (not abundant) etc.
notable humus layer.
Jalax, *Goodenia*, *Muhlenbergia*, etc.

Oct. 10 - 190 + ¹³ + night-hawks
seen ~~very~~ abundantly
flying around over the
trees at 5 p.m. some -
overcast but bright, probably
a migration, as several
dozen seen at once at m.p. 213.

Sept. 10 - 2.5 mi. s.w. of Fanny Gap
in *Quercus prinus* forest
with sinuaceous shrub layer

- 40271 *Galax aphylla* L.
common in humus soil
72 *Geodiera pubescens* (Willd.) R. Br.
occasional in humus soil
73 *Rhododendron*
74 *Lyonia ligustrina*
75 *Rhododendron*
76 *Magnolia fraseri*
large trees rare, seedlings common

Sept. 11 - Intersection just
north of N.C.-Va. boundary -
slope with young
Pinus strobus forest - two
ages - older with trees 15-20
m. tall, with some admixture
of oaks, mostly *Q. coccoloba*.
the other a denser stand
of pure pine perhaps 7-8
m. tall.

2850' Carroll Co.
11.20 AM

forming loose patches
in ~~humus soil~~, scape erect.

leaves dull green, midrib
white, reticulate nerves
pale green.

shrub 2 m. tall
shrub 1.2 m. tall.

shrub 2.5 m. tall.
tree 15 m. tall, 3-4 dm. dbh,
fruit red, seeds pink.

In the older stand there
is rather little under-
growth, some oak sapling,
Rubus flagellaris, *Chimaphila*
maculata, *Epigaea repens*,
etc. quite a bit of seedling
reproduction of *Pinus strobus*
seedlings from 2 to 10 dm. tall
very common. No older.
forest canopy thin but almost
complete.

~~Sept 11~~ - From Virginia boundary to Sandy Flats, along Blue Ridge Parkway. *Pinus strobus* is a very important tree in forest, and is especially conspicuous colonizing old field and openings. Many conspicuous young stands, often exclusively *P. strobus* resulting from this colonization.

Sept. 12

from Sandy Flats to Mt. Mitchell. *P. strobus* is present but not so important in vegetation. Birch and cedar are the most conspicuous feature here.

On road to Mt. Mitchell State Park *Picea*, *Tsuga* and finally *Abies*, become dominant, though apparently in poor condition. The top of the mountain is dominated by *Abies* forest with some *Picea*. The forest of *Abies* is closed, of rather low stature, perhaps 6-10 m, up to 7 dm dbh, closely spaced, 1-2 m ground with deep litter

and poor layer, mostly covered by ~~hypnoid mosses~~ ^{hypnoid mosses} and *Bryozoa*, with patches of *Isotria medeolae*, *Asplenium* and *Adiantum*, some *Lantana*, locally *Asplenium* *platyneuron* is abundant. Locally *Rhododendron latifolium* forms loose patches, some *Menyanthes* and *Salvia latifolia*, but generally scattered *Abies* seedlings & *Picea* seedlings form the principal shrub vegetation. In more open spots *Solidago*, *Viola blanda*, *Aster purpureus*, *Dryopteris "spinulosa"* are more abundant.

This forest is believed never to have been burned, acc. Park Dept. but he says some think it has been. No records of fire on summit.

On the slopes, now
 113. Waterfall Run
 forest almost pure
Betula among them
 up to 10 m. tall, 10 cm. diameter
 to 10 m. mostly spaced,
 scattered *Picea* and
Abies. Some undergrowth
 of *Hydrangea arborescens*,
Ribes - *stolonifera*,
 with *Asplenium*, *Adiantum*,
Thelypteris, etc. *Picea*
 and *Abies* all small trees,
 up to 5 m. tall.

Left says that Balsam fir
 woolly aphid is killing the
 fire all around the park
 and has entered the park.
 If parasites do not help the
 whole stand is doomed.

Cragg's Gardens -
 ridge covered by a dense
 scrub about 2 m. tall of
Rhododendron catawbiense,
 with scattered *Forbesa americana*
 2 m. tall in most places. The
 main slope is toward the
 west-n.w. and seems to
 show the effect of wind
 from that direction. It
 would be called a heath field.

Just north of Carter
 Center, a typical beech
 grove, with dwarf beech,
 mosses and *Permelia*
 on trunks and branches.

Sept. 13 - Canyon of
 West Fork of Little Pigeon River

on floor
 mountainous
 and floor
 m. high
 local
 forest communities
 present - no *Betula alleghaniensis*,
Tsuga, & *Magnolia*
praseri, *Asplenium*, *Adiantum*, *Thelypteris*,
 with a heavy undergrowth
 of *Rhododendron maximum*,
 with podzolized profile.
 Possibly general for
 narrow ravines.

2010 - 1010
 The other with a great
 diversity of hardwoods,
 no *Rhododendron*,
 brown forest soil, no
Tsuga, rich ground
 layer, *Aristolochia macro-*
phylla, etc. Mainly
 on flatter broader ravines,
 running up slopes.
 Noted at this season by
 abundance of brownish
Aesculus.

Betula alleghaniensis & *Tsuga* seedling
 start on fallen logs. *Betula* also on
 open slides, etc.

Sept. 12 - top of Mt. Mitchell

- 40277 *Ornithoglossum montanum*
very common, forming
patches on ground
- 78 *Pteris "spanulosa"*
very common locally,
especially in thinner areas
- 79 *Aster*
very common locally,
especially in thinner areas
- 80 *Lolidaago*
very common, especially
in small openings
- 81 *Aster acuminatus*
very common, especially
in small openings
- 82 *Hedysotis michauxii* Torr.
common in small openings
and stream channels
- 83 *Saxifraga michauxii*
very common, especially
on rocks and in small openings
- 84 *Ostrya filix-foemina*
common in dense forest
- 85 *Abies fraseri*
complete dominant

Sept. 12 - slope of Mt. Mitchell
dominant in dense forest

- 86 *Betula alleghaniensis*

2050 m. alt.

sterile at this season

rays white, shreading
irregularly, disk greenish.
flowers bright yellow.

rays white, disk
yellow, turning reddish.

prostrate, single
flower seen blue. (mostly
sterile, some in fruit.)
petals white.
plant brittle.

achenes not reddish.

tree 6 m. tall, 1 dm dbh.
core scales from ground
beneath tree.

1900 m. alt.

tree 6 m. tall, 7 cm. thick, sterile.

Sept. 12 - Cragg & Sandline
Shenandoah Co.

40797

Fagus

dominant in low mossy
forest in gap

with
H. gap

Sept. 12 - top of Mt. Mitchell
disturbed open ground
near parking lot.

88

Bromus tectorum

89

Carex normalis

Sept. 12 - West Fork Little Pigeon
River Shenandoah Co. Tenn.

Flat bottom of narrow
ravine

Lophoclelea forming patches
along stream at base
of rock cliffs, in hemlock
birch forest.

Sept. 12 - Gap north of Indian
gap - Welch Gap - a narrow
one moist with rich
ground layer mostly
broad-leaved herbs + Carex sp.
- Epipactis, Asplenium, etc. etc.
Solidago canadensis(?),
Epipactis, etc.

very narrow + 1' Carex
predominant. Thinner
herb layer

but Carex never forest

tree 5 m tall, only one
old fruit seen. Leaves
have a brownish cast.

2040 m

4150'

Spruce-fir forest great
south, also two variants
one predominantly spruce,
with almost no ground
layer, dry, a ridge.

Other much more moist
(by drainage), rich
undergrowth of Viburnum
umbellatum, Rubus etc.
and rich ground layer
in valleys.

5300'

Top of Clingman's Dome
area of dead fir with
abundant regeneration.
Becoming thicket result of
exposure. Fact that in places
these are linear, leading up
from openings, due to wind throw
support this.

Sept. 13 Andrews Bald

Open grassy rounded slope - Anthoxanthum, Agrostis sp. with abundant broad-leaf herbs, such as aster sp., Angelica, Potentilla simplex (?), Reynoldsia, Fragaria, Solidago spp., Hieracium paniculatum, Ranunculus, etc.

invaded somewhat by spruce, fir, Rhododendron catawbiense, Vaccinium erythrocarpum, V. simulatum, etc. Amelanchier arborea, Rubus canadensis?, some Salix latifolia, Acer rubrum, etc.

Great Smoky Mountains Nat. Park, Sevier Co.

Sept. 13 - West Fork Little Pigeon R.

40290 Asplenium

occasional on wet cliffs at bottom of narrow ravine

2 91 Betula alleghaniensis

~~Sept. 13~~ almost pure stand on road embankment, (dominant locally in nearby forest.)

1 92 Fagus

rare seedlings in bottom-land forest

Sept. 13 - same - bottom of ravine

1 93 Carex alpina

on wet rocks.

Heath Bald in canyon below first terrace below Newfound Gap.

on steep ridge - wet in ravines, bare rock covered usually with leaf m. & litter.

a Kalmia latifolia

c Rhododendron catawbiense

c R. carolinense

o Clethra acuminata

~ Ilex sp.

c Vaccinium erythrocarpum

o V. simulatum

~~Clethra acuminata~~

~ Amelanchier arborea

~ Viburnum cassinoides

ca. Lonicera

ca. Rubus canadensis

forming dense tangle 3-4 m. tall, completely closed.

ac. Liriodendron tulipifera

small tree 5 m. tall, sterile (large trees, with perched or stilt root systems in nearby forest, seedlings on logs) sterile seedling 1 m. tall

flowers white

196

1959

Tennessee - N.C.

- 40294 ~~top~~ *Chelone lyonii*
on wet rocks
- 95 *Diphysa cymosa*
small colony on wet
flat ground between stream and diff

Sept. 13 - same - in heath
bald, dense gnarled scrub,

- 4 96 *Leiothyllum buxifolium*
very local and rare in
- 2 97 *Rhododendron carolinense*
common in

- 3 98 *Penstemon*
common, especially in edge of
- 1 99 *Ilex* ?
rare in

Sept. 13 - first gap n.w. of
Indian Gap, s.e. of Claymont Dam,
in low Fagus forest

- 40300 *Epipagus americana*
common

- 1 01 *Carex*
locally abundant
- 2 02 *Solidago curtisii*
common
- 4 03 *Cuscuta rostrata* Shuttleworth
common, on various plants

same - in ~~the~~ spruce-fir forest

- 2 04 *Senecio rugelii*
locally abundant
- 1 05 *Lycopodium lucidulum*
common

Lewis Co. Swain Co. 197

erect herb, flowers
rose purple.

erect herb, to 0.7 m tall,
fruit blue-black.

4400-4500'

on steep rock ridge

1731 (1972)

compact shrub 1 m tall,
leaves glossy, dark green.
shrub 1 m tall (others
seen to 2 or more m.); under
side of leaves coppery.
sprawling shrub.
leaves dark green above.
shrub 2.5 m. tall, sterile.

1630m

5300'

first known in Nat Park.
Swain Co. N.C.

wet

thick herb layer.

stems purplish-bronze

flowers purple

not known to ~~be~~

flower or fruit

stems green, not glaucous;
flowers yellow.

stems dull orange;

flowers white, corolla

campanulate-urceolate
lobes reflexed pedicels not thickened.

scapes erect.

erect

40306 *Solidago erecta* Pursh?
common

Sept. 13 - Clingman's Dome, near

207} *Abies fraseri*08} *Abies fraseri*09} *Abies fraseri*

in dense fir forest

10 *Picea mariana*

in spruce-fir forest

same - ~~trail~~ To Andrews Bald11 *Abies fraseri*

abundant in spruce-fir forest

#

12 *Vaccinium erythrocarpum*

common in uneven mixed scrub

13 *Diervilla sessilifolia*

common in uneven mixed scrub

14 *Quercus latifolia*

rare along trail in spruce-fir forest

Sept. 13 - Andrews Bald,

on Forey Ridge

in open grass-herb meadow

on gentle rounded slope

15 *Vaccinium simulatum*

occasional, scattered

16 *Hebecladon paniculatum* f. *glandulosum*

common

17 *Agrostis scabra*

rays conspicuous,

flowers yellow.

leaves pubescent reticulate

leaves mostly erect

leaves somewhat distinct

scales picked up from ground

Tree: leaves somewhat
ascending somewhat
pungent.

Swain Co. N.C.

2400 m.

Tree 10 m. tall, 15 cm. dbh.

core from ground beneath,

immature (cut by squand?)

leaves ~~are~~ more or

less distinctively spreading.

shrub 2 m. tall

fruit juicy, reddish black

pleasantly tart.

1400 m.

shrub 2 m. tall,

branches and fruit, erect,

1300 m.

erect, solitary.

1750-1750 m.

Swain Co. N.C.

shrub 2 m. tall; fruit

blue-black, pleasantly tart.

flowers yellow

culms scattered

- 1 200 1959 ~~Tennessee~~ North
 46 40318 *Lanthornia compressa*
 2 most abundant grass
 1 19 *Fragaria virginiana*
 occasional
 1 20 *Gentiana yellow-green*
 rare
 1 21 *Gentiana linearis*
 rare
 1 22 *Penstemon alternans*
 common
 2 23 *Amelanchier arborea*
 common invader

with Sept. 13 - same
 3 R.W. 24 *Carex*
 Backing
 1 25 *Carex*

- 3 nothing Sept. 13 - Trail to Andrews Bald
 2 26 *Ilex montana* T. & G.
 local in irregular scrub
 1 Sept 13 - Andrews Bald
 27 *Rhododendron coccineum*
 rare

Carolina

more or less caespitose

sterile at this season

flowers deep purple-blue

flowers dull purple, striped
 with pale appendages and
 membranes white, lobes longer
 than appendages

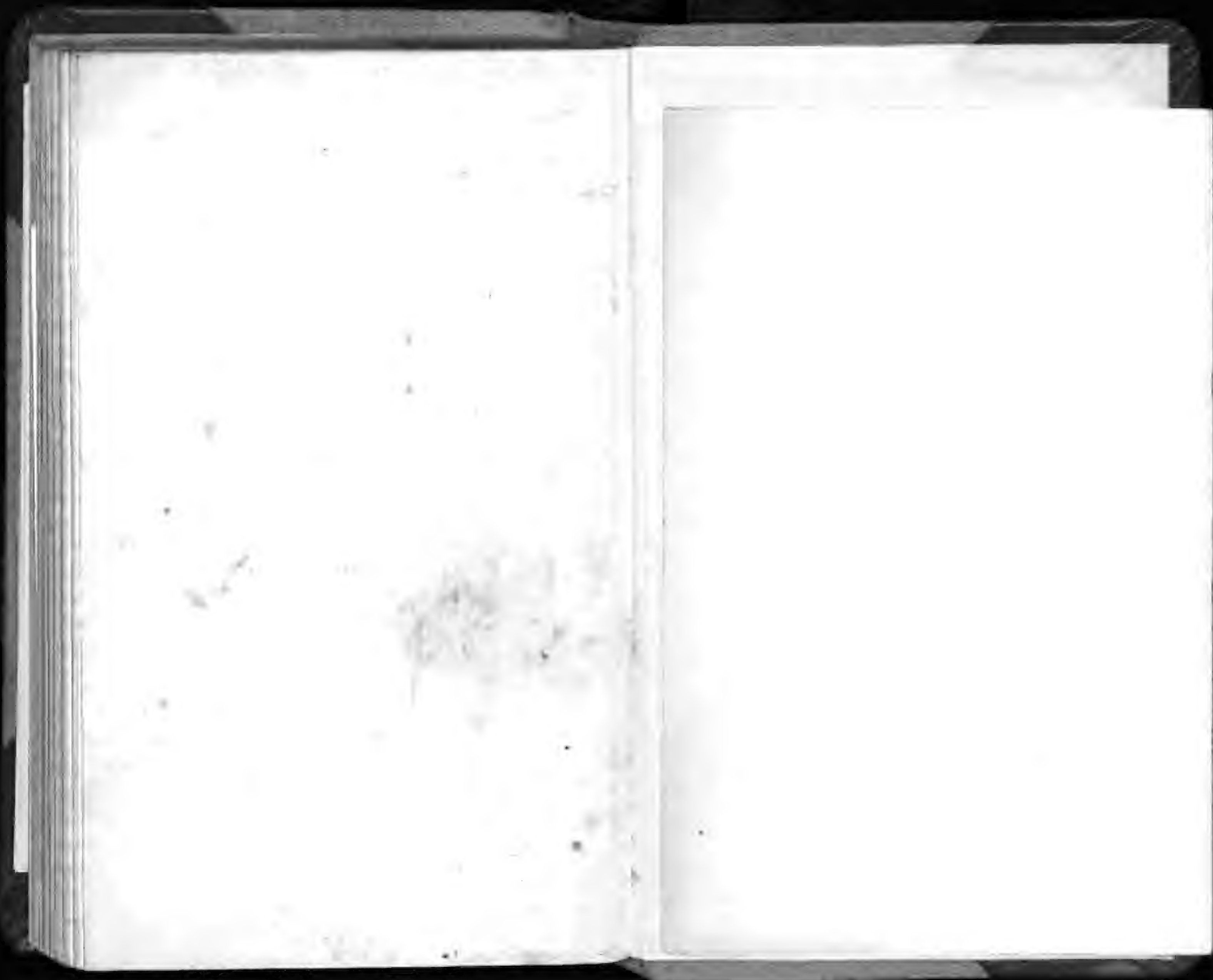
leaves dull whitish,
 - glandular

shrub 1 m. tall, sterile

Bald

sterile shrub 2.5 m. tall

shrub 1.5 m. tall



Montréal, 22 août, 1959

Montreal, August 22, 1959

IX Congrès international de Botanique

IX International Congress of Botany

19-29 août, 1959: August 19-29, 1959.

Excursion 1. Napierville

- a) Premier arrêt. Erablière typique située à 1/4 de mille au sud de l'intersection de la route Sherrington-Napierville et de la route No. 9. On pourra y voir et récolter les plantes suivantes:

First stop. Typical maple grove located 1/4 m. south of the intersection of route No. 9 with that of Sherrington-Napierville. The following plants will be seen:

- ✓ *Acer saccharum*
✓ *Actaea pachypoda*
✓ *Adiantum pedatum*
✓ *Amphicarpa bracteata*
✓ *Aralia nudicaulis*
✓ *Aralia racemosa*
✓ *Arisaema triphyllum*
✓ *Asarum canadense*
✓ *Aster acuminatus*
✓ *Aster macrophyllus*
✓ *Athyrium Felix-femina*
✓ *Botrychium virginianum*
✓ *Brachyelytrum erectum*
✓ *Carex gracillima*
✓ *Carex leptoneuria*
✓ *Carex pedunculata*
✓ *Carya cordiformis*
✓ *Caulophyllum thalictroides*
✓ *Dryopteris marginalis*
✓ *Dryopteris Phlegopteris*
✓ *Dryopteris spinulosa*
✓ *Epipactis Helleborine*
✓ *Fagus grandifolia*
✓ *Fraxinus americana*
✓ *Galium triflorum*
✓ *Glyceria melicaria*
✓ *Caulophyllum*
✓ *Impatiens virginiana*
✓ *Galium palustre*?
✓ *Pectula alleghaniensis*
✓ *Ostrya*?
✓ *Thelypteris discolorata*

- ✓ *Hepatica acutiloba* *H. americana*
✓ *Hydrophyllum virginianum*
✓ *Medeola virginiana*
✓ *Onoclea sensibilis*
✓ *Osmorhiza Claytoni*
✓ *Phryma Leptostachya* *Panax*
✓ *Polystichum acrostichoides*
✓ *Ranunculus recurvatus*
✓ *Rhus radicans*
(Herbe à la Puce; Poison Ivy;
ne pas toucher: produit une
violente dermatite; do not
touch: produces a painful
dermatitis)
✓ *Sambucus canadensis*
✓ *Smilacina racemosa*
✓ *Solidago flexicaulis*
✓ *Tiarella cordifolia*
✓ *Tilia americana*
✓ *Tsuga canadensis*
✓ *Trillium erectum*
✓ *Ulmus americana*
✓ *Uvularia grandiflora*
✓ *Uvularia sessilifolia*

- ✓ *Lycopodium lucidulum*
✓ *L. obscurum*
✓ *Osmunda regalis*
✓ *Osmunda Claytoniana*

- c) Quatrième arrêt. Tourbière, à 1½ milles au nord des deux stations précédentes. On y rencontre plusieurs plantes caractéristiques des tourbières de la province de Québec. On pourra y récolter:

Fourth stop. Bog located 1½ miles north of the preceding two stops. Many of the typical plants of Quebec bogs are present. Among other plants, it will be possible to collect:

| | |
|-------------------------|---------------------------|
| Andromeda glaucophylla | Habenaria blephariglottis |
| Betula populifolia | Ilex verticillata |
| Carex canescens | Kalmia polifolia |
| Carex pseudo-Cyperus | Larix laricina |
| Carex trisperma | Ledum groenlandicum |
| Chamaedaphne calyculata | Monotropa uniflora |
| Cypripedium acaule | Nemopanthus mucronata |
| Drosera rotundifolia | Picea mariana |
| Dryopteris cristata | Sarracenia purpurea |
| Dryopteris spinulosa | Sorbus americana |
| Eriophorum spissum | Vaccinium corymbosum |
| Eriophorum virginicum | Viburnum cassinoides |

N.B. - On pourra faire un cinquième arrêt dans un champ abandonné si l'horaire le permet.

- It may be possible to make a fifth stop in a waste field if time permits.

